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PASSIM

As soon
Seek roses in December—ice in June ;
Hope constancy in wind, or corn in chaff ;
Believe a woman or an epitaph,
Or anything that's false, before
You trust in critics.
BYRON.

LONDON'S theatre is ruled by criticism; a production can close after an outburst of unjustified scorn from a handful of men and women while hysterical shrieks of superlatives are copied from evening papers and blazoned over more fortunate theatre doorways. But where criticism is not regarded as dogma it has several useful functions; it stimulates actor and author, composer and conductor, player and painter to the creation and performance of better works, it arouses interest from a wider audience, and develops in the audience a more critical appreciation.

At Guy's the many societies are in various states of health. In the past few weeks the Theatre Club has played to full houses, while a very competent Music Club performance was poorly supported, and the Photographic Club was all but disbanded for complete absence of members at its meetings. The *Gazette* has always published accounts of club events but has too frequently been unable to do them justice and the critiques are sometimes rightly condemned as parochial. Ideally, comment should come from outside the student community and we hope in a new column of criticism starting in our next issue to print the opinions of outside experts. But the column will have a second role of presenting students' views on events less intimately concerned with the Hospital. Guy's Hospital Medical School is a part of London University, and while the several Guy's clubs provide for many tastes, we hope to feature some of the activities of the large range of London University Societies. Other societies too cut across Hospital loyalties, such as the Hospitals Symphony Orchestra, and at a concert it gave jointly with the London Medical Orchestra last year, in which three Guy's instrumentalists performed, there was one Guy's student and one Guy's nurse in the audience of 600. Without wishing to sound too like a cultural fairy godmother,

we hope that we may create an awareness of much that is neglected but worth attention, by printing details of events to be covered at least a fortnight before the criticism appears.

Approached for the first time to write a criticism, many well-informed people claim to be unqualified to give an authoritative judgement, but as James Lowell put it, "a wise scepticism is the first attribute of a good critic". Those who weekly amass a collection of second-hand comments from the "Sunday Heavies" would surely find it salutory occasionally to express first-hand opinion on a topic of their own special interest. Nor is it necessary to follow the present vogue of satire in night-club, theatre and now on television, and desert "wise scepticism" for distorted and ill-mannered cynicism. We hope that our new column will provide a vehicle for much responsible and stimulating comment.

It is not such a far cry from Mrs. Beeton and her book, to the dilemma of the embryo practitioner struggling with his pharmacopoeia and formulary as he fills in the appropriate suffixes to the command *Recipe* (in haste abbreviated to ℞). Cooking may be a source of dismay to the newly married housewife but dispensing the ingredients is the least of the problems, especially when measured by the 'pinch'—the latter of great merit to the potage. But alas, the newly qualified doctor has the invidious task of choosing his measure from such melodious and mediaeval units as minims, scruples, drachms, grains, fluid ounces and even imperial gallons, which also have a following of the most unlikely abbreviations.

During recent years attempts have been made to standardise the methods of prescribing and dispensing drugs. Gradually the metric system is insinuating itself into the general haze of Dark Age measurement and it is hoped that soon the take-over will be complete. But as one of our correspondents suggests this is proving a very difficult objective to achieve. This is partly due to the fact that here one is shaking the very heart of medical tradition. There are undoubtedly those practitioners who get quite a thrill from inscribing their favourite hieroglyphics on an E.C.10., to understand which one has to have qualified before such-and-such a year to appreciate. If the change to an obvious and standard system of measurement provides greater accuracy and less confusion and error, then this must mightily overbalance the foibles of the traditionalists.

Guy's has boasted its own Pharmacopoeia since 1791, the last edition being in 1937. Latin was used exclusively as the mother tongue, giving elegance to the placebo and conformity to the old favourites. In this little book, which is still to be found on the wards, one reads of many bizarre and eye-catching remedies. The pre-antibiotic days are here evidenced by the list of anti-toxins, vaccines and anti-sera, but these are followed by a random list including *ventriculus dessicatus* (dessicated stomach) and 11 different preparations of the invaluable *Rheum* or Rhubarb B.P. Under *Ferrum* we read 'Iron

B.P. It is metallic iron in the form of bright wire having a diameter of about 0.1 ml (No 42 Standard Wire Guage.)' Truly a delicacy. A list of the common poisons (with notes on their treatment) includes: Yew, Sheep Dip, Rough on Rats, Mother's friend, hemlock, flypaper, autumn crocus, sewer-gas, and aeroplane varnish.

However, since that time Guy's has produced a supplement to the National Formulary, published in 1954, as a successor to the Pharmacopoeia, in order to perpetuate some of its favourite remedies, and add newer ones. In this revised vade-mecum various further poisons have been added to the list in order to keep up with current progress in toxicology. Here we find: Parson in the pulpit, moth balls, male fern, laughing gas, home-perms, crayons, and Brompton mixture and last but not least Botulinus toxin. It is consoling to know that there is such an exotic list to choose from and it is interesting to speculate on what a 1962 collection would contain.

Now that most of the Latin and pseudo-Latin has been eradicated from therapeutics one is left with the bane of trade-names. It seems that nothing will halt the increasing emesis of such useless and high sounding eponyms that the drug firms delight in producing. With what surprise one discovered that nikethamide and coramine were one and the same drug only to learn with dismay that it does not act on the heart at all, so making its trade name quite absurd.

Nevertheless progress is relentless, and whereas before most of the doctor's armamentarium consisted of placebos, now we have more potent and specific remedies which with their superior powers bring increased hazards of iatrogenic disease. We hope that a future or present poet will not have occasion to write of our medical ethics as Chaucer did of the Doctor in his prologue to the Canterbury Tales:

All his apothecaries in a tribe
Were ready with the drugs he would prescribe
And each made money from each other's guile;
They had been friendly for a goodish while.

In this issue we publish two separate accounts of visits by Guy's students to hospitals in Chicago and Hong Kong. Until very recently it has only been possible for an undergraduate to get medical experience abroad by personal enterprise and money. But now opportunities are appearing for clinical students to spend three months at hospitals overseas in lieu of a statutory appointment normally undertaken at Guy's. It has often seemed strange that so many students from America and elsewhere have been able to spend a similar time at Guy's without the possibility of a reciprocal exchange, but now at least one Guy's student may be able to do this during the coming year. It is hoped that this is but a start to a series of exchanges which will be built up over the next few years and those interested in a visit to Chicago during this year should read the notice on page 25 of this issue.

GUY'S DIARY

JANUARY			Exhibition. *Haematemesis.*
12th	S	10.00	Mr. R. S. Lawrie. Departmental Round. Clinical Theatre. All students are invited.
14th	M	1.00	Mr. Murray Falconer. Clinical Lecture. *Long-Term Results of Surgery for Temporal Lobe Epilepsy.*
15th	T	1.00	Mr. Blackburn. Clinical Lecture. *Regional Ileitis.*
17th	Th	1.00	Mr. Willmore. Clinical Lecture. *Disorders of Voice, Speech and Language.* (Illustrated by recordings).
		5.00	Mr. Peter Schurr. Neurosurgical Round. Mr. Schurr will present two neurosurgical patients.
18th	F	1.00	Mr. MacLean. Clinical Lecture. *Steroids—Kill or Cure.*
		2.15	Combined Round. Conducted by Dr. K. S. MacLean and Sir Russell Brock.
24th	Th	1.00	Dr. M. Craft, Lecturer in Medical Psychology to the University of Wales. Clinical Lecture. *The Parental Contribution to Sub-normality, Delinquency and 'Teen-age Psychopaths: Essay on the Up-bringing of Children.*
25th	F	1.00	Dr. Houston. Clinical Lecture.
		2.15	Combined Round. Conducted by Professor W. J. H. Butterfield.
26th	S	10.00	Clinico-Pathological Conference. Clinical Theatre. All students are invited.
28th	M	1.00	Mr. Blaikley. Clinical Lecture. *Some Interesting Cases of Endometriosis.*
29th	T	1.00	Professor Atkins. Clinical Lecture. *The Nature of Radio-active Substances.*

We offer our congratulations to Dr. C. Bishop on his appointment as Consultant Anaesthetist to the Ipswich and East Suffolk Hospital Group.

OBITUARY

DR. G. P. A. SECHIARI

Many will be distressed to hear that Dr. G. P. A. Sechiari died suddenly at his home in Derbyshire on 22nd December, at the age of 48.

He came to Guy's from Selwyn College, Cambridge, and qualified in 1941. While at Guy's he was a regular and enthusiastic member of the Rugby XV. As the result of an injury sustained on the Rugby field, it was found that he had an illness which was to prevent him from doing service in the Forces. This he always regretted.

After House Appointments in the Guy's Sector, he spent three years as R.S.O. at the West Middlesex Hospital. He returned to Guy's as an Anatomy demonstrator for three years and he will be remembered by many students for his patience, tolerance and understanding. Whilst in the department he undertook the arduous task of indexing Gray's Anatomy.

In 1948, after a short stay at Putney Hospital, he decided to go into general practice in Derby, and continued as always to put his all into his work, with unfailing patience and devotion. Five years ago he had an illness from which he never fully recovered, yet he continued to carry on as though nothing had happened, sparing himself not at all in his practice.

His patients, colleagues and friends will miss him sadly, and all will feel robbed of many years of friendship and help by his death at such an early age. Many will remember that he married Mary Williams, a Guy's nurse, in 1942. Our sympathy goes out to her and to his two sons and daughter.

H.L.J.

CHASING THE DRAGON

Some experiences and impressions gained during 3 months medical clerkship in Hong Kong

By J. A. CHILD

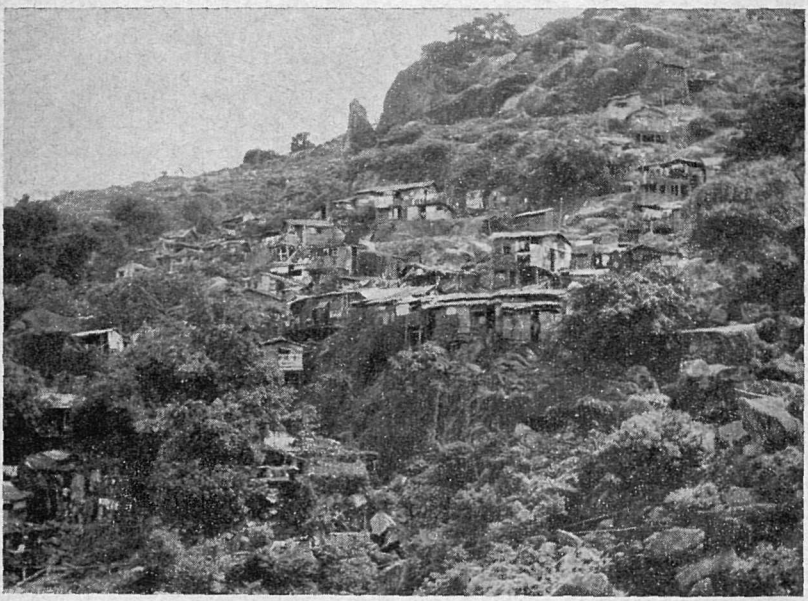
Following the safe arrival in Canton of the good ship *Macclesfield* in 1699, the early years of Anglo-Chinese relations saw a gradual increase in trade, which was, however, strictly limited because of the confirmed Chinese belief that Westerners were barbarians. The trade was lucrative, especially in opium from India, despite official Chinese prohibition. It was a siege of the British community in Canton over this vexed question, that triggered off the official desire in Parliament, on the part of Lord Palmerston, to obtain either a proper commercial treaty, or an island where trade would be free from outside pressures. Backed by an expeditionary force, Captain Charles Elliot, R.N., signed a treaty and occupied the island of Hong Kong proclaiming it a British Colony. There was dissatisfaction at home, Lord Palmerston describing the new possession as a "barren island with hardly a house upon it"; and displeasure in Peking. Further hostilities ensued before Hong Kong was formally ceded to the British Crown in August, 1841. More fighting ended with the acquisition of Kowloon in 1860, and in 1898 a large stretch of mainland and a group of islands (The New Territories) was obtained on a 99 year lease. Possessed of a great natural harbour, the first hundred years of Colonial history were marked by development as a trading

post. Following the Japanese occupation, another phase of development has been chiefly industrial, enabling the Colony to survive economically and achieve a standard of living, which, albeit poor by our standards, is among the highest in Asia. It is now self-supporting. The central parts of Victoria and Kowloon are as modern and glossy as their western counterparts.

Largely as a result of help from the London Missionary Society, the Hong Kong College of Medicine for Chinese was founded in 1887. It opened with two students, one of whom was Sun Yat Sen the future founder of Republican China. The University was not opened until 1912, when the College became absorbed within the faculty of medicine. The present yearly intake of undergraduates in the faculty is eighty, and will be one hundred in three years time.

Housing the Multitude

As Hong Kong grew and prospered, the flow of Chinese into the Colony increased. With the population at 1 million in 1939, there was already a problem of overcrowding. During and following the civil war of 1949, there was a steady stream of refugees, which has continued. In May this year when many were turned back the numbers had become enormous—up to 5,000 a day. There is also a rising birth-rate, and the last census of 1961 revealed a population of $3\frac{1}{2}$



million. Most of the refugees had nowhere to live and occupied large areas, including the hillsides and ravines, outside the urban districts, with their wooden squatter huts. Despite the clearance of these areas along with resettlement, many people still live in this way, with no proper sanitation, people and animals sharing the same small

plot, the water supply running downhill to a tap where hundreds have to queue. There are similar rough and ready shacks high up on the roof-tops of private tenements; and around the shores, some have made homes of old boats and shacks, even huts on stilts above the mud, which is the common refuse dump. If a family is eventually able to rent a flat in one of the tenement buildings, this may merely consist of a partitioned-off cubicle on the same floor as a dozen others. People often live and work in the same cramped spaces. Housing is, not unnaturally, regarded as the most acute social problem, and the Hong Kong government is attempting to rehouse all those now living in squatter areas, in resettlement estates. Time and available money have dictated the nature of these estates which are made up of huge multi-storey blocks; crude by our standards and providing little else than one room—of up to 120 square feet—per family, with communal sanitary facilities. The number of buildings is impressive; at present a new block is being completed every ten days. Merely to build living accommodation is not the sole aim, in particular each block has some space reserved for a school: those we saw had them on the roof tops. In spite of school building, there is still a gap between places available and places required, and there is a shift system at many schools. For the aspiring student it is a hard grind to University; at every grade an examination eliminates large numbers, and many who reach University have had to study to the exclusion of all else.

Bare Necessities

Strangely, the refugees have been largely responsible for the great industrial boom, particularly in textiles, in that they provide a ready source of cheap labour; and there is a group of refugees from the great business and industrial centres of China, particularly Shanghai, with business and technical skill as well as capital. Inevitably there is some exploitation. There is a seven day week and often no such thing as retirement. While we saw something of industries which have social welfare similar to that in Britain, there are very many others especially those carried on in old premises and at the back of shops, where lighting and ventilation is poor and the risk of injury great. There is little in the way of social conscience. The main reason for refugees coming to Hong Kong, is food and employment, and whilst it is a haven for many of them, the standard of living which they attain is very low by western standards. There is no rent control, and those outside Government schemes may be left with barely enough money to feed and clothe themselves. Rice is the basis of all meals and is often only poorly supplemented by meat and fresh vegetables; apparently a malnutritious diet, yet we saw very little in the way of nutritional disorders. The resilience and vigour of the Chinese in Hong Kong is striking.

Natural Hazards

Hong Kong is sub-tropical. The winter is cool and dry, the summer hot and humid: over three-quarters of the annual rainfall

is between May and September. During this summer, the water supply became critical; a continued drought having brought reservoir levels exceptionally low. Running water was restricted to 3 hours a day. The people most hard hit by this were the squatters and others who relied on the public tap, and large queues of people had to wait

hours for their turn to draw water. The long awaited rainy season came with a typhoon, which was also a major disaster. At the village of Shatin in the New Territories, where there had been a tidal wave, there was almost complete devastation amongst shacks, which were reduced to piles of wood; more solid buildings had roofs missing and doors ripped off. Over a hundred people had been killed.

Public Health

Due mainly to overcrowding and the nature of the climate, but also to a distinct lack of public health consciousness, the problems of public hygiene are vast, especially in the matter of food and water distribution. In country districts there is the covering of wells, destruction of larvae, and, not least, prevention of farmers using human faeces as fertilizer. It takes much publicity and propaganda to produce a good response to vaccination campaigns. Last year there was a Cholera epidemic; this year there has always been a threat of another, spreading from the mainland beyond the border, or from Formosa. Strict safety precautions included mass vaccination, destruction of soft fruit, and stopping of fruit importation. In spite of all this, there were cases, but no epidemic comparable to last year.

Many refugees require medical treatment, and come because of this. Some have left their families in China, and we saw a number of

cases of children with tuberculosis who had been sent alone. New hospitals are being built, one to be the largest in South East Asia; but the number of potential patients is huge. There is no "National Health" system: the very poor can obtain free treatment however, and for the rest, an attendance at an Out-Patient clinic costs only 1s. 3d. General practice is private practice. There is a large element of superstition in the Chinese attitude to disease and the herbalist still occupies an important place in the community. We frequently saw patients, usually of the poorer classes, who had first attempted self-cure, consulted friends, then the herbalist, and sometimes only years later, a doctor. Herbal medicines are often dangerous in themselves apart from the delay they mean in the institution of proper treatment. Injections are regarded as potent treatment, and patients may repeatedly change their practitioner until they get satisfaction. There is a dangerous shortage of blood donors, one reason being that it is widely believed that the individual is possessed of a fixed volume of blood, which once depleted, remains so for ever.

Tuberculosis

This is responsible for one in every ten deaths, and it is estimated that 1.5 to 2 per cent. of the population have the active disease. Serious overcrowding, the influx of refugees harbouring the disease, and industrialisation, all make control difficult, particularly in view of the acute shortage of beds in hospitals for tuberculous patients. The two principal methods of dealing with this situation are the introduction of B.C.G. vaccination for the newborn, and the institution of ambulatory therapy; hospital beds usually being reserved for patients with organisms resistant to the standard drugs, and those in whom there is a possibility of surgery. Since the introduction of B.C.G. vaccination of infants, there has been a marked fall in the numbers of deaths among children. It has also been shown that regular, controlled ambulatory therapy can produce a 95% sputum conversion. There is, however, a great risk of irregular therapy with the consequent danger of disseminating resistant organisms. It was not difficult to appreciate why late presentation and drug resistance occur so frequently; a productive cough, loss of weight, and general lassitude are usually not regarded as good reasons for consulting a doctor. As the disease progresses, the first resort is frequently self treatment with herbal medicines. Many attend clinics from time to time and carry on taking their drugs intermittently for years. Refugees may arrive having had no treatment or occasionally having been on Isoniazid alone and usually irregularly. In resistant cases a second line of drugs is being used, particularly Ethionamide and Pyrazinamide. Both have been found to be of great value. Two-thirds of the cases treated surgically are of the chronic group with organisms resistant to the standard drugs, usually with cavitation and fibrosis restricted to one lung. There is a selection on the basis of clinical assessment and respiratory function tests.

We saw a large number of cases of tuberculosis of bones and joints, in children. The incidence of tuberculosis of the spine, although high, is

decreasing. A typical story is of weakness in the lower limbs, associated with a change of gait, and the development of a mass over the spine, which may be painful, and there may have been manipulation by bone-setters. Such cases often present with paraplegia. The method of treatment adopted is the anterior spinal fusion using rib grafts. Of patients with tuberculosis elsewhere a boy of fourteen provided a sorry example: He had had a limp for 8 years, with pain on and off over the left hip, and progressive deformity of the limb. He had been treated by herbalists and bone-setters, and for the last 2 years had sinuses over the left hip. He eventually came into hospital with a fixed ankylosis of the left hip which was adducted and in 45° flexion.

Other Infectious Diseases

We were able to see a large number of cases of dysentery and enteric fever. Enteric fever sets many a diagnostic problem. The classical course of the disease is rarely seen, and the signs and symptoms are frequently minimal. The Widal reaction has been found inapplicable as a diagnostic tool, reliance often being placed on blood and marrow culture. Occasionally typhoid has presented as a massive intestinal haemorrhage following the administration of herbal medicines. The bacillary dysenteries present a more clear cut picture, although here there is a serious problem of antibiotic resistance. There are many cases with organisms resistant to sulphonamides, streptomycin, and tetracylines, and chloramphenicol, but, however, sensitive to Nitrofurantoin, which is found very valuable in treatment. With amoebic dysentery there tends to be vague signs and symptoms and diagnosis rests on the assiduous search of stools for amoebae, or cysts.

There was recently an increase in the number of cases of diphtheria, associated with an increasing population of children, and a poor response to vaccination appeals. We saw a number of 'classical' cases with well defined membrane formation. Post-diphtheritic complications are common because of late presentation and the delay in institution of treatment. A four year old boy had palatal and ocular palsies but was making a good recovery.

Poliomyelitis is very common, but there is a low incidence of bulbar palsy, and 67% of cases are under 3 years of age, in marked contrast to the situation in Britain.

Undoubtedly the most needless disease is tetanus neonatorum which is almost invariably due to the application of cheap baby powder to the infant's umbilicus. Samples of powder have been shown to contain the spores of Clostridium tetani. The prognosis is poor. Two cases of tetanus in adults had followed the use of herbal medicine locally, in one case to an infected ear, in the other to a laceration of the toe. They demonstrated trismus, risus sardonicus, and a board-like rigidity of the abdomen. Both recovered.

There are about five thousand lepers in Hong Kong. Great superstition still surrounds the disease which has traditionally been regarded as punishment from heaven for moral misdemeanour, and

incurable. The leper may still expect to be driven from society. Non-contagious cases and also, of necessity, some mild cases are treated as out-patients; the remainder are referred to the leper colony island of Hay Ling Chau ("Isle of Happy Healing"). This is an impressive community of 500 patients, built very largely by the lepers themselves. The backbone of treatment is diaminodiphenyl-sulphone, but arrest of infection may still leave the patient with crippling deformities. Plastic surgery, particularly in the reconstruction of nasal deformities, tendon transplants, and physiotherapy, are of great importance as preliminaries to any future rehabilitation, which is often the most difficult part.

A number of refugees have arrived in Hong Kong with swollen limbs or testicles due to Filariasis. Two such cases were seen, one with a unilateral non-pitting oedema of the right lower arm, the other with testicular elephantiasis. The microfilariae were isolated in blood smears made in the early hours of the morning when the organisms enter the circulation.

General Medicine

Medical cases are on the whole markedly different to those seen in England, but with some surprises. Of respiratory diseases tuberculosis, is of course dominant. There are, however, a large number of cases of asthma and of chronic bronchitis, which is becoming increasingly common. There is a striking absence of the degenerative diseases in the cardio-vascular system. Infective processes, directly or indirectly, are responsible for much of the cardiovascular disease in Hong Kong. Syphilis is still common, and we saw several cases of syphilitic aortitis presenting as angina pectoris. Rheumatic fever is frequently seen, and there has been a marked increase during the last two or three years.

There is a wealth of liver and biliary disease in Hong Kong: In recurrent pyogenic cholangitis which as compared with Britain, takes the place of cholelithiasis in importance, the sex incidence is equal, and the age peak is between 40 and 50. There is frequently a history of severe sharp pain in the right hypochondrium, fever, and subsequent jaundice. The pathology is essentially one of an intra-hepatic infective process leading to suppuration, and the formation of stones in the liver, common bile duct, and gall bladder is secondary. The sequel of repeated attacks is biliary cirrhosis. Two other suppurative conditions of the liver that occur with some frequency are amoebic abscess, and the solitary pyogenic abscess, the aetiology of which is unknown. Their incidence is approximately equal. The same treatment is applied to both types, *i.e.*, closed aspiration with air replacement, plus specific treatment of amoebiasis in the one case, and antibiotics in the other. There are many cases of cirrhosis. In Hong Kong only a minority are attributed to alcoholism, viral hepatitis, or Schistosoma japonicum. In most cases the pathogenisis is obscure, and in a high proportion of these there is an enlarged spleen which may be massive. They all tend to have very marked physical signs:

large numbers of spider angiomata, with bright pink liver palms, and large tortuous veins coursing the abdomen. Another feature is bleeding from the gastro-intestinal tract, not from varices, but as part of a general bleeding tendency due to an increased vascular fragility. There is a high incidence of primary carcinoma of the liver, in 95% of which there is a preceding cirrhosis. Clonorchis sinensis, a liver fluke, whose adult habitat is within the biliary passages of man, has been implicated in the aetiology of a proportion of cases. The parasite is ingested by the host in partially cooked or raw fish, which is eaten by Cantonese, especially with rice congee. It appears that the presence of the fluke within the biliary channel induces a hyperplasia of the epithelium, sometimes with metaplasia and carcinomatous change. Clinically, there is an appalling rapid course, and death may occur a few months from the early symptoms of distending discomfort after meals, loss of weight, and malaise. In the later stages there is great pain and there may be displacement of the rib cage with an obvious bulging on the right side. We saw a number of patients who had hypoglycaemic attacks, and others with polycythaemia, in association with primary carcinoma. (Features of the disease which have been well documented in the Medical Depatment at the Queen Mary Hospital.)

Although not a general medical problem, nasopharyngeal carcinoma is the third commonest cause of death from all kinds of malignant disease in Hong Kong, being exceeded only by carcinoma of the stomach, and primary carcinoma of the liver, and therefore worthy of mention. So common is it in this part of the world that it is sometimes referred to as the "Canton tumour". Among diseases of the nervous system, there is a high incidence of neurosyphilis, and a striking absence of disseminated sclerosis.

The population of Hong Kong is exposed to a great number of hazards in the form of drugs, herbal medicines and chemicals; we saw cases of aplastic anaemia and haemolytic anaemia in this connection. Cooleys' anaemia is common; Addisonian pernicious anaemia is never seen. Of endocrine disease, thyrotoxicosis seemed very common; an impression formed at a special thyroid clinic, where there was a very large turnover of cases, with rows of exophthalmic patients queuing up outside. A high proportion of cases present at a late stage with thyrotoxic heart disease. A complication in adult male patients is hypokalaemic periodic paralysis. The high incidence of Addison's disease is only to be expected in view of the frequency of tuberculosis. Diabetes in Chinese patients presents a different picture to that in Europeans; there is a fusion of the two main types, with a much more uniform picture and many young diabetics were being controlled on oral drugs alone.

Addiction

It seems probable that 1% of the population of Hong Kong is addicted to heroin or opium. The addicts are found mainly among the low income group. The attraction of addiction varies: it is frequently associated with illness—particularly with pain; it may be

for erotic pleasure; and it is particularly frequent among tailors, where the need is to stay awake all night. The smoking of opium involves a good deal of apparatus and means visiting a den, which makes detection a great risk. Heroin, which also offers a greater 'kick' at approximately the same cost, has in consequence become increasingly popular. It is usually mixed with a barbiturate and taken initially by vapourising on the tip of a cigarette pointed sky-wards (called "ack-ack"); as this loses its 'kick' the addict starts "chasing the dragon"—inhaling vapour through a paper tube. A few turn to intramuscular and finally intravenous injection. It can be taken in any secluded spot with little fear of detection. The sequelae of addiction may be summed up as the degeneration of the individual, physically and mentally, with a loss of all moral sense. Stealing occurs to finance the addiction, with negligence of family and social obligations. The addict gradually loses interest in food and is prone to infections, especially tuberculosis. The principle of treatment is substitution therapy using methadone, and rehabilitation—where possible by forming clubs similar to Alcoholics Anonymous. There is a high relapse rate. Prophylaxis, by stopping the entry of drugs of addiction, is another approach to the problem, but with hundreds of junks and sampans coming in and out every day, this is easier said than done.

During last summer A. G. Knight of Sheffield University Medical School and myself spent three months as students at the University of Hong Kong, under the auspices of the Nuffield Foundation. We stayed at St. John's College at the western end of Hong Kong island, and were medical ward clerks at the Queen Mary Hospital, which is the teaching hospital of the University, although we visited several other hospitals including the Rutongee Sanatorium and the Castle Peak Mental Hospital, where we gleaned most of the information about drug addiction.

I would like to express my thanks to the Nuffield Foundation for permission to write about this scholarship.

CHANGE FOR A QUARTER

by C. B. T. ADAMS

During the last two years there has been in existence the beginning of a student exchange programme between Guy's and the University of Illinois, at Chicago. This article is not written to add to the already numerous reports of American life in Medical Schools that have been published in the *Gazette*, but it is an attempt to draw attention to the existence of this exchange programme, to indicate what sort of experience one may obtain from it and finally to invite applications for the year 1963.

The idea of an exchange programme came from an Illinois student named Tom McNeil. Having obtained permission from the Guy's Hospital Medical School, he came over here in the Summer of 1960. The next year he became President of the Students' Council of the University of Illinois Medical School. At that time, as a result of a series of brilliant business coups organised by the Council, the student body had a sizeable budget to spend. At the instigation of Tom McNeil a sum of money was appropriated by the students for the setting up of an exchange programme with Guy's. The Senate of London University has recently allowed time spent in America to count towards the time required for the "final" examinations, thus encouraging the existence of such exchange programmes. In 1962 John Axton went over as Guy's representative and his experiences may be found in a previous number of the *Gazette*. Last summer Don Fleischli came over from America as their official representative, bringing in his wake a band of unofficial, but enterprising followers.

The experience gained from such a venture is hard to sublimate on to paper. However, I can briefly record my own experiences which may or may not give a representative picture. I chose to do Neurology and Neurosurgery at Chicago. Dr. Oldberg, the head of the Neuro-psychiatric Institute, very kindly took me in and turned me over to his resident staff. There were no other students doing full time Neurology and Neurosurgery, so I was grafted on to the residents' programme for three months. I was given one week's grace to learn how to do lumbar punctures, put up "drips", drill burr-holes and assist at Neurosurgical operations. I was then informed that I would be responsible for the twenty-one beds in the women's Neurosurgical ward. This entailed managing sick people in general, clerking the new patients (about six each week), doing any investigations I thought necessary and assisting at the operations performed on these patients.

Towards the end of my stay it was decided that I should in addition, do the routine pneumo-encephalograms, brachial and caratoid angiograms and the muscle biopsies. I was also allowed to do a couple of lumbar laminectomies for prolapsed discs. Such a programme kept me fairly busy—more busy perhaps, than if I had done a stereotyped course.

I was very kindly given free board by one of the "Fraternity Houses" which are hostels run by and for students. Chicago has

many cinemas and museums, a symphony orchestra and an opera company—all of extremely high quality. I was extremely well looked after by the students and residents with whom I worked. The hospitality showered upon me during a visit to Washington and New England was quite fantastic, considering that all the introduction my hosts usually had been given was a telephone call from a mutual friend.

It is hoped that the exchange programme will be put on a definite basis for the future. Mr. Lawrie has kindly consented to help with the organisation at this end. At the moment the Illinois students are paying the fare of the Guy's student—covered by a sum of 600 dollars. It is hoped that we can eventually pay our fair share of the expenses of this exchange and thus open the way for more people to go over.

The only problem is to decide at what stage of one's training one should go. It is felt in Chicago that the last two years of their clinical training are the best time. However, for our representatives it might be preferable to go between qualifying and starting their first house appointments and this would be acceptable to the Faculty Members in Chicago.

Attention is drawn to the notice on page 25 of this *Gazette* concerning the 1963 exchange programme.

THE CHRISTMAS SHOW

I enjoyed the Christmas Show, and I suppose enjoyment is really the only criterion at this time of year. The audience is easy to please as it arrives happy, well fed and prepared to laugh. Critical faculties are hardly brought to bear. Nevertheless such a show must be judged by the highest standards, because if bad it is extremely painful for the few sober members of the audience. To put on a show as good in parts as this is more of a compliment to the audience than it deserves.

The stage, which was constructed by Richard Sturge, made as much use as possible of the available space in the concourse of the basement floor of New Guy's House. The fact that I could see most of it from the insecurity of Sister Mullineaux's shoulders half way down the underground passage speaks for itself. The frequent arrival of automatic lifts flanking the auditorium lent a vertical dimension which many more permanent theatres would envy.

Alex Kuczynski was an amiable and amusing compere, and as feed to some of the walk-on jokers he was associated with some of the loudest laughs. I particularly enjoyed the American television scene, when he interviewed Brian Taylor, who portrayed a British rocket expert, dressed in thigh boots with a giant three-penny rocket strapped to his back. Brian Taylor was also the docker in the pub

sketch which contrasted the Working Man and the Medical Student (Dundas More) together in 'The Grapes'. I thought the writing here lacked punch, even point, for the Borough is a classless area. Dundas More was also umpire in the excellent Registrars' tennis match, variations of which can be heard any day on the two courts at the gas-works end of the College Catering Company's premises.

It would be kinder to draw a veil over the operating theatre sketch. Although traditional this scene is such an overworked mine that there is little gold left. Malcolm Williams struggled manfully with this weak material, but he had a much better chance to display his excellent mimicry during the imitation of Juke Box Jury, the most amusing and most carefully worked out sketch of the show. Terry Brown as Broadway Tooting was a very credible pop idol, and when he later sang some hillbilly songs to his guitar it seemed likely that he has a considerable following in his own right.

There must be girls in the Christmas Show, otherwise the audience would consist entirely of nurses of tender years. The legs were very good this year, and were I believe directly responsible for a nasty scene in the audience when Mr. English snatched Dr. Trafford's Barr and Stroud 40 x 15 achromatic ex-Admiralty binoculars. Vivian Larbalestier will surely have increased the sales of drip-dry shirts this year. Sue (Man's best friend) Roche was also noticed, but then she always is. I don't know the names of the other girls, but I hope to find out.

The final carols sung by the cast in various stages of undress may have seemed to some to be in rather poor taste, but the infectious hilarity of the preceding choruses made the carols a quite natural and happy transition.

Brian Taylor who wrote much of the material and produced the show must be congratulated on welding a bunch of individuals into an enjoyable and smoothly presented entertainment.

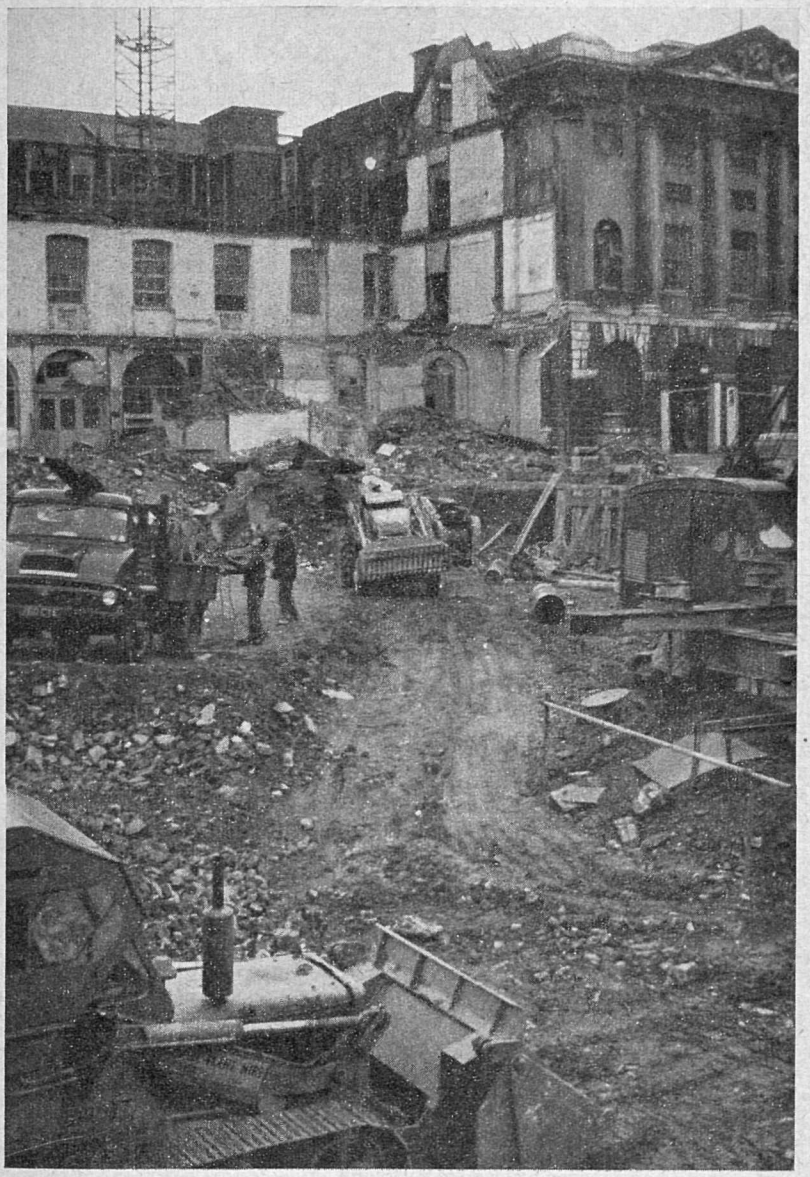
A.P.H.

Fifty-three Years Ago

From the Gazette of 1910.

'From the Past'

'At the top of Guy's House were the Foul Wards, known throughout the district as Guy's Garrets, consisting of two tumble-down wards, Samaritan for men, and Patience for women, while at the end of the passage was a special Itch ward, which knew no lack of patients. A man used to go through the wards selling shrimps and watercress to the patients in the afternoon and oysters in the evening. One of the most interesting characters about the Hospital was Barney, the back-gate watchman. Fat of figure and face, with a husky voice and large yellow-looking eyes, he was an unforgettable figure as he walked round the Hospital throughout the night calling the hours in a voice loud enough to wake any patient who was fortunate enough to have got to sleep.'



Bulldozers finish what the incendiary bombs started.

AN APPRECIATION

MISS I. ZYGOURAS

Miss I. Zygouras, Secretary in the Matron's Office to four successive Matrons, and Secretary to the Guy's Hospital Past and Present Nurses' League, has resigned recently after thirty years' service.

Ianthi Zygouras was, by inheritance a Greek Ionian Islander. Her forbears with many others, accepted the offer of British Nationality when Britain gave up the Protectorate and ceded the Ionian Islands to Greece in 1864. Her family ultimately settled in Britain.

Miss Zygouras was a graduate of the University of London, holding a B.A. honours degree in Italian and French. In connection with her studies she travelled in Greece and Italy and attended the University of Perregia.

In 1932, after a secretarial course, she came to Guy's as holiday assistant in the Almoner's Office, then as relief assistant in the Matron's Office, on account of the serious illness of the famous Miss M. Smith, who had worked as Secretary in the Matron's Office since the days of Dame Sarah Swift ! In 1933, when it became apparent that Miss Smith would never be able to work again, Miss Zygouras was appointed to the permanent staff and became the Matron's Secretary, and, in 1934, Secretary to the Guy's Hospital Past and Present Nurses' League. At that time the membership was 1,200. It is now over 3,000.

During the last war, Miss Zygouras made one of a trio of remarkable women who worked as senior secretaries at Boundary House, Orpington, Kent, the Guy's Headquarters of Sector X in the Ministry of Health's Emergency Medical Service. I refer to Miss Delamere in the Hospital Offices, Professor T. B. Johnston's Office, to Miss D. French, for the first two years, in the Finance Office of Mr. B. Lees Read, and to the Sector Matron's—my own office.

Those who had business with these three offices throughout the war, can testify to the cheerful and untiring devotion to their work which these ladies gave. No hours were too long or work too complicated for them. I well remember some of the junior ministerial clerks saying—perhaps after regular hours, "Yes, I *can* type, but typing is not my grade now ! " To Miss Delamere, Miss French and Miss Zygouras there was no such thing as 'after hours'. Although they were not called upon to do office night duty, if they were in the building and emergency work cropped up, they never left until it was done. As the years go by, these things are forgotten. Guy's was lucky to have in the Head Quarters office, such a trio of skilled and devoted secretaries. I am glad to have this opportunity to pay a tribute to them and especially to my own secretary, Ianthi Zygouras.

Among her other spheres of usefulness she could be called upon to translate for bewildered foreign patients, seamen, airmen, Parthians, Medes, Elamites, dwellers in Mesopotamia—who, from time to time drifted into the wards.

After the war, an enormous amount of intricate work devolved on the Matron's Office, as a result of the demobilisation of the nurses in the Emergency Medical Service, the re-organisation of the regular nursing staff, and of Nurses' education.

For the League, the task of keeping in touch with the numbers of Guy's Nurses who were working literally all over the world, the preparation of an up-to-date edition of the Nurses' League Handbook and Register, with the need to obtain hundreds of new addresses and particulars, brought heavy work to the League's Secretary. Much of this work had to be done at home—out of office hours. Miss Zygouras has often expressed to me her gratitude to several Guy's Ladies, notably to Mrs. Bulleid and indeed also to the Zygouras family for their help in addressing envelopes. A formidable task !

Those Guy's nurses who read these few lines will, I know, wish to join with me in sending Miss Zygouras their thanks for her never failing help in League matters and wishing her every happiness in her well earned retirement.

EMILY E. P. MACMANUS.

CRITICISM

In a new column of criticism starting in the next issue, we hope to print an account of the exhibition of paintings by patients of Warlingham Hospital, at the Mermaid Theatre. The exhibition remains on show until the end of next week.

CORRESPONDENCE

Letters to the Editor of the Gazette

Addisonian Crisis

SIR,—Sister Walker's letter in the *Gazette* of 15th December cannot be allowed to go unanswered.

No one will deny that there is substance in her complaints, but surely these are the exception. The students are an integral part of Guy's and it cannot be of any advantage to impose unnecessary restrictions on them. In many wards the students are allowed free access if there are good reasons, they are treated kindly and if on take-in, with hospitality. They respond by co-operating and helping as much as possible. To allow access to partake in life-saving measures out of hours, although generous, does not show full understanding of the students' role at Guy's.

Finally, contrary to Sister Walker's belief, the students are not incompatible with the patients' well-being.

Yours faithfully,

R. KUMAR.

Guy's Hospital, S.E.1.

Metric v. Dupois

SIR,—The final relinquishing of the old Imperial, or Avoir Dupois, system of Weights and Measures in favour of the Metric System is a move which some consider long overdue. However, it would seem to us that this somewhat protracted step is being made unnecessarily complicated by illogical inconsistencies.

Let me qualify this statement with a few examples. Most drug cupboards in the Hospital contain a bottle of Phenobarbitone labelled gr. ½ (30 mg.) and another marked Quinalbarbitone gr. 1½ (100 mg.). On investigation one discovers that gr. 1=60.799 mg., thus the statement that gr. 1½=100 mg. is (approximately) 8.8% inaccurate whereas the label on the Phenobarbitone bottle errs less than 0.4%.

These strange discrepancies are not confined to dry measures: they abound in fluid also.

For many months the nursing staff of Guy's has regarded the fluid ounce as being equivalent to 30 millilitres instead of 28.412 ml. This inaccuracy of (approximately) 5% does not seem to distress the medical staff: the pint being thus rendered equal to twenty-one fluid ounces. This may be satisfactory so far as fluid balance charts are concerned but are such approximations to be tolerated in connection with drugs ?

Is everyone aware of the difficulties confronting the nursing staff in the paediatric wards ? There the drachm is variously presented as being equivalent to 3.6, 4 or 5 millilitres—a variant of 28%. The majority of elixir bottles state that ℥1=4 ml. But Erythromycin Suspension is 250 mg./12.5 ml./℥ ii ss. Broxil Syrup appears in different strengths, 125 mg. in ℥1 or 5 ml. and 90 mg. in ℥1. One

bottle of Furadantin is labelled 25 mg. in 5i, another 25 mg. in 3.6 ml. It is, therefore, surprising and heartening to read on one bottle Phenergan 5 mg. in 5i, 5 mg. in 3.6 ml. This problem has faced the staff on Diplock for over nine months to my certain knowledge, and despite repeated visits to dispensary, 'drug time' on Diplock remains a nightmare.

This is a teaching hospital. What are we to teach student nurses who are trying to learn about drugs, dosage and administration ? How is the houseman to prescribe a drug in order to be certain what will be given ? How are we to achieve order out of this apparent chaos ?

Yours etc.,

STELLA AVIS.

Henrietta Raphael Nurses Home,
Guy's Hospital, S.E.1.

Guy's Hospital Theatre Club

SIR,—This year, the University of London one-act play festival is being held at the end of January, and the Theatre Club are staging an entry for this event. The play is "TRICOLOR SUITE", a comedy by Peter S. Preston and the cast includes many of our experienced actors and actresses that your readers will have seen before. Production is in the hands of Malcolm Burke, responsible for "I Am a Camera", assisted by Brendan Hicks, "Harlequinade".

For those of our patrons interested in this contest, the performance is one of four plays to be staged on the night of 29th January, at 7.0 p.m., in the University of London Union, Malet Street. We trust that we may see many of our friends from Guy's at this first attempt to parade the Theatre Club outside its usual surroundings.

Yours etc.,

ERIC TILLER,

Hon. Secretary, Guy's Hospital Theatre Club.

Guy's Hospital, S.E.1.

REVIEWS

DISEASES OF THE RESPIRATORY SYSTEM. By N. C. OSWALD and J. FRY. Blackwell Scientific Publications, 1962. *Price* 32*s.* 6*d.*

This book fulfils the very limited aims which are set by the authors, but if the target is large enough it becomes increasingly difficult to miss it, even with a bow and arrow which the authors insist on using although we live in a nuclear age. It is depressing to read yet another book on diseases of the respiratory system and find—on page 1 this time—that physiology has only a limited application to respiratory disease. Graphs are displayed which purport to show for example that more than one third of Dr. John Fry's patients in his Beckenham practice between the ages of 60 and 70 have chronic bronchitis. Without defining the disease, chronic bronchitis has no more meaning than a "weak heart" did seventy years ago. In a textbook for University students it hardly seems necessary to devote more than a page to the symptoms of the common cold, containing such sentences as "Colds are most prevalent in the winters."

It is only fair to say that the descriptive accounts of major respiratory diseases, and the chapter on examination of the chest are clear and well written. The X rays are good, but there is little more in this book than can be found in even the smaller textbooks of general medicine.

A.P.H.

AIDS TO EMBRYOLOGY. By M. B. L. CRAIGMAYLE. 6th Edition, 1962. Ballière, Tindall and Cox, *Price* 10*s.* 6d.

The original character of this book has been preserved by its new author, who has altered the text as little as possible. It has been brought up to date in sections dealing with chromosome numbers and the placenta, and has been clarified in those sections concerning the notochord, and the face, nose and palate.

Welcome changes are the alteration in the sequence of the earlier chapters, which now provide a continuous account of the formation of the embryo, and the amplification of the introduction to include a description of the basic processes involved in this formation. The last chapter on The Transmission of Hereditary Characters has been omitted from this edition, perhaps unintentionally, for the author refers to this chapter on P. 189 as mentioning the importance of genetic factors in the production of digital abnormalities.

Unfortunately, the book is still inadequately illustrated, both qualitatively and quantitatively, in spite of the incorporation of several new diagrams. A few of the redrawn illustrations were clearer in the previous edition.

Errors were noticed on (i) Pp. 135 and 137, the axial vessel of the upper limb is the seventh not the eighth cervical intersegmental artery; (ii) P. 183, part of the description of the axial skeleton is incorrect, there being no mention of the origin of the intervertebral disc from the condensed portion of each sclerotome.

Although this book has been written as an aid, and is therefore not expected to contain a comprehensive account of embryology, it is unfortunate that because of its detailed text and inadequate illustrations, it does not give a clear, concise account of the subject as required by medical students preparing for the Second Professional examination, and therefore, in spite of its reasonable price, cannot really be recommended to them.

C.E.S.

A TEXTBOOK OF BACTERIOLOGY. By R. W. FAIRBROTHER and GEOFFREY TAYLOR. Heinemann Medical Books 1962. *Price* 30s.

The ninth edition of Fairbrother's text-book of bacteriology has been produced just three years after the last edition, a fact which certainly indicates the authors' determination to keep this text-book up to date. The main revisions for this edition have been in those chapters relating to viruses, antigen-antibody reactions and to the Salmonella-Shigella—E. coli group.

The general form of the book is a standard one for undergraduate bacteriology text-books. The first half of the book is general, with discussion of the general properties of bacteria, and of general immunology, chemotherapy and the mechanism of infection. There is the usual chapter on sterilization, though I fail to see why this is such a favourite topic in view of the fact that the average doctor in this country is virtually never responsible for, or interested in, actual sterilization techniques.

The second half of the book deals with individual bacterial groups. Sensibly enough, the authors have not gone into much technical or experimental detail, nor do they make heavy weather of morphological or biochemical properties of bacteria. The relationship between specific bacterial groups and specific diseases is well and clearly stressed, and emphasis is placed on a definite and coherent system of bacterial classification. The final chapters are on Rickettsiae, viruses and allied topics.

In general this book is better balanced than most, but I still feel that it is not fully attuned to the needs of the graduating student or houseman. Altogether, 58 pages are devoted to the morphology, biology, cultivation and multiplication of bacteria, and to sterilization proceedures. In all this there is a considerable amount of dead wood, and a plethora of facts which I could only conceive of remembering for a few days before and after my exams: and even this effort would be of very questionable ability. On the other hand, the whole question of chemotherapy is discussed in only 31 pages, and the vital topics of bacterial resistance and antibiotic side-effects are not clearly treated. For example, after describing the phenomenon of over-infection, the authors remark ". . . it is important that these drugs should not be used indiscriminately but that, whenever possible, their use should be subject to laboratory control." In view of the fact that the nature of this "laboratory control"

is nowhere specified, this pious statement leaves me none the wiser if and when I have a patient who develops a superinfection to look after. Again, the mechanism of the development of bacterial resistance is of great importance, and only by understanding it can the average practitioner take the correct steps to help keep the development of resistance in check. However, this subject is given very little attention, and one would do far better to read the *Scientific American* or even *The Times* to be kept in the picture.

The second half of the book is better, except for the chapters on viruses. These are not very clear, and the authors have not been very successful in the admittedly difficult task of correlating specific clinical entities with specific viruses. I am also left in some doubt about practical steps in diagnosis and treatment which I can take when looking after patients with virus diseases, and I must admit that the fog which surrounds the subject of virus disease has not been lifted to any great extent.

The final question worth asking is does anyone need a bacteriology text-book for finals? It is certainly possible to pass the London University and Conjoint exams relying entirely on lecture notes and demonstrations. If, however, one wants at least the potential of rising above the scrape-through level (or if you hate lectures), then this book is the best of the standard texts. However, the really popular and student-attuned text book of bacteriology has still to be written.

J.S.

PARTIAL DENTURE DESIGNING. By JOHN H. FARRELL. Henry Kimpton. *Price* 45*s*.

The author confines the subject matter of this book to the designing of partial dentures, and he does not deal with the other stages of this work. The main part of the book deals with partial dentures in a general way, and the final section illustrates specific cases with alternative designs for each in metal or acrylic resin. There is a good chapter on the tissue damage caused by partial dentures, in which the author makes a plea for simplicity of design and the elimination of unnecessary detail. This chapter includes a number of diagrams illustrating how intricate designs can become food traps.

Most of the text is orthodox, but the reviewer was interested by several points. The table on page 16 compares the mechanical properties of the materials used, and is particularly helpful. In a later chapter, the author criticises some of the names used for clasps, and suggests that names such as "reverse back action" are unsuitable. Stress-breakers are dealt with only briefly, but this is a complicated aspect of the subject which need not concern the average student or practising dentist.

The final section deals with specific cases. Acrylic resin is not suitable for all designs of partial denture, because of its low fatigue strength. Most partial dentures are best made in metal which has superior physical properties, but because of the expense, this is not always possible. Thus the author gives alternative designs to suit all conditions of practice.

The book is unpretentious and emphasises the basic facts. The text is easy to understand and the diagrams are good. It cannot stand alone as a student textbook because of its limited subject matter, but would make interesting supplementary reading. It should appeal to the interested practising dentist. This aspect of dentistry is often neglected in the Health Service, and this book could help dentists to raise the standard of their partial denture work, to the benefit of their patients and their own professional reputation.

G.A.N.E.

THE HOUSE PHYSICIAN'S HANDBOOK. By C. ALLAN BIRCH. E. & S. Livingstone. Second Edition. 1962. *Price* 17*s*. 6*d*.

The second edition of this excellent little book retains all the features of the first edition with the addition of an extremely good section on intravenous infusion.

In 200 pages the author includes a remarkable number of facts all of which may at some time be useful to the house physician. In short this book may be throughly recommended both to the newly qualified houseman and to his more senior colleagues.

G.W.C.

ADVICE TO THE EXPECTANT MOTHER. By F. J. BROWNE and J. C. MCCLURE BROWNE. E. & S. Livingstone. 12th edition, 1962. *Price* 1*s.* 3*d.*

This small book, long-standing and pre-eminent in its field provides a full explanation of the whole pre-natal process and this is coupled with much expert advice and information. Truly every possible facet is covered adequately and in some cases in considerable detail.

One might argue that the detailed section on pre-eclampsia is out of place in such a book and that some of the advice, for instance that on travelling in pregnancy, is out-moded. There are no illustrations and diagrams; perhaps a few simple line diagrams would have helped in the explanation of labour and breast feeding. These are minor points; in general the book is admirable and well suited to its purpose.

E.P.W.T.

SYNOPSIS OF ORAL HISTOLOGY. By S. N. BHASKAR. Henry Kimpton. *Price* 58*s.*

Dr. Bhaskar's new book on oral histology is written in two parts. Part 1 deals with the embryology of oral tissues from the fertilisation of the ovum to the recognisable human form. This first section contains a particularly clear account of the development and growth of the human jaws.

The second part of the book covers the histology and microscopic anatomy of the special dental tissues. The great delight of the book is evident in this section—the clear and perfectly labelled photomicrographs, a study of these alone enables the student to learn a great deal about the dental tissues. The last chapter gives a rather brief account of the temporo-mandibular joint.

Dr. Bhaskar, even though a noted pathologist, confines his book to histology; i nforming us that only with a knowledge of normal tissue can we possibly understand abnormal tissue. He presents here a very clear and unconfused account for the student reading the subject for the first time. The book contains excellent references for further reading and an adequate index.

A book to be recommended to undergraduates and as a reference book for graduates. Is it too much to hope that the next edition may be extended to embrace anatomy ; so that we may benefit further from his clear style of presentation.

J.V.M.

SPORT

General Review

The Christmas vacation and the weather have restricted Hospital sport in the past fortnight to one solitary Squash match. Most clubs, except the Rugby Club, suspend their activities during this period. The Rugby Club had fixtures with the Old Merchant Taylors and Richmond, but both these games were cancelled owing to the snow and hard grounds. ' A.' and ' Ex. A.' matches against Gravesend were also cancelled.

With the Hospital's first cup game, against the winners of the match between St. Mary's and Westminister, only four weeks away, members of the Rugby Club have attempted to keep in trim with P.T. sessions in the gymnasium and exhausting runs through the deep snow at H.O.P. It is hoped that the weather will quickly improve to allow more serious team practice and match rehearsals against Cheltenham, Old Alleynians and Devonport Services. In their Junior Cup Competition, the 'A XV' follow the same draw as the '1st XV.'

The Association Football and Hockey Clubs recommence their fixtures next Saturday, 12th January. The Football XI meet the Royal Veterinary College and the Hockey XI meet the Old Beccahamians. Both Clubs are still competing in

their respective Inter-Hospital Cup Competitions. The Football XI meet the winners of the match between Charing Cross and St. Bartholomew's, and the Hockey XI play their semi-final against The London, the holders, early in February.

As light-hearted relief from more serious endeavours on Saturdays, the Tankards and the Spirochaetes continue to give members of the Rugby and Hockey Clubs recreation on selected Saturdays throughout the winter season. For those ignorant of the significance of the navy blue ties with the golden tankard, or the rampart organism, or, of infrequent noisy musterings of often dissipated, sweatered gentlemen in 'The Miller' at Sunday lunch-time, a few words of explanation will not be out of place.

The Tankard's Club was formed about a decade ago. Initially, members took part in Sunday cricket matches, but this was changed to rugby when players found the larger ball easier to follow. Matches are played against such illustrious opponents as, the Tittenhanger Tigers, the Piccadilly Red Hot Pokers, the London Hospital Dionysians, the Barnet Naggers and Warlingham R.F.C. The team is selected from members of the Rugby Club, past members and often those uninitiated in the code. Three match appearances and a large consumption of ale earns one a tie.

Their counterparts on the hockey field, the Spirochaetes, commenced four years ago. The side is composed essentially of non-first eleven players and matches are held against the Hartley Country Club, The Pussdogs, Epsom and others. The one game played to date against Professor Butterfield's XI, resulted in a win for the Spirochaetes. Their games are notable for the number of stoppages, mainly for refreshment and their members claim considerable dexterity at the dartboard and bar afterwards. Again, after three appearances one qualifies for a tie.

The traditional Boxing Day match between the Residents and the Students was, in the opinion of the Residents' captain, fortunately cancelled.

HOSPITAL INFORMATION

GUY'S HOSPITAL

HOUSE APPOINTMENTS

1st March, 1963

Applications are invited for the following House Appointments at Guy's Hospital due to begin on 1st March, 1963, applications giving choice of post and choice of hospital, in order of preference, to be lodged with the Superintendent *not later than* **Thursday, 31st January, 1963.**

Assistant House Surgeons (*Pre-Registration*) 3
The appointment will be for six months, the first three months to be spent as A.H.S. During the second three months of the appointment candidates will either move to the post of Casualty Officer (Surgical) or will remain as A.H.S.
These vacancies will normally be open only to Pre-Registration candidates applying for their first appointment and not to candidates seeking their second six months appointment.

Assistant House Physicians (*Pre-Registration*) 3
The appointment will be for six months, the first three months to be spent at A.H.P. During the second three months of the appointment candidates will either move to the post of Casualty Officer (Medical) or remain as A.H.P.
These vacancies will normally be open only to Pre-Registration candidates applying for their first appointment and not to candidates seeking their second six months appointment.

Casualty Officers (*Pre-Registration*) 6

House Surgeons (1 *Pre-Registration*)
(1 *Pre- or Post-Registration*) 2

House Physicians (1 *Pre-Registration*)
(1 *Pre or Post-Registration*) 2

Resident Obstetricians 2
1 *Pre-Registration* (*To commence* 1.3.63)
1 *Pre- or Post-Registration* (*To commence* 1.5.63)

Throat and Ear House Surgeon 1
(*Pre- or Post-Registration*)

Dermatological House Physician 1
Post-Registration (*To commence* 1.5.63)

Neurological House Physician 1
(*Post-Registration*)

Children's House Physician (*Pre-Registration*) 1
(Second six months candidate only)

House Physician in Clinical Pathology and Radiotherapy (*Pre-Registration*) 1
(The first three months will mainly be spent in the Department of Clinical Pathology but he will be expected to look after a total of 5 beds shared by Dr. Bishop and Professor Butterfield. In the second three months period his main duty will be to look after the Radiotherapy beds.)

House Physicians in the Department of Psychological Medicine 2
S.H.O.
(To commence 1.4.63)

Resident Anaesthetists 2
1 S.H.O.
1 *Post-Registration*

The Medical Committee will also consider applications for posts at outer Hospitals as follows:—

HITHER GREEN HOSPITAL
House Physician in General Medicine and Infectious Diseases (*Pre-Registration*) .. 1

JOYCE GREEN HOSPITAL
House Surgeon (*Pre-Registration*) 1

LEWISHAM HOSPITAL
House Surgeon to Mr. Cavendish (*Pre-Registration*) 1

ORPINGTON HOSPITAL
House Surgeon (General Duties with Physical Medicine) (*Pre-Registration*) .. 1

House Surgeon (General Duties with E.N.T.) (*Pre-Registration*) 1

House Surgeon (General Duties with Orthopaedics) (*Pre-Registration*) 1

QUEEN MARY'S HOSPITAL, SIDCUP
House Surgeons (*Pre-Registration*) .. 2

ST. JOHN'S HOSPITAL, LEWISHAM
Casualty Officer (*Pre-Registration*) .. 1
(To commence 17.3.63)

NOTICE FOR PRE-REGISTRATION CANDIDATES.

Pre-Registration candidates are reminded that the number of posts at Guy's is small compared with the number of students who are likely to qualify. Students applying for appointments at Guy's, therefore, are advised to consider applying for Pre-Registration posts elsewhere at the same time, in order to avoid delay in obtaining a post. A number of recognised posts are available in the South-East Region. Details of posts in this region and elsewhere in the country are available in the Medical School Office.

Pre-Registration Candidates who have completed six months in Medical or Surgical posts are reminded that they must now apply for Surgical and Medical posts respectively. The post of Resident Obstetrician will be regarded as a Surgical post only.

APPOINTMENTS VACANT

Applications are invited for a **full-time Research Fellowship in the Thoracic Surgical Unit** for research on Cardiovascular problems. It is desirable that applicants should possess a higher qualification in Surgery. Initial salary normally within the range £1,250 to £1,400 per annum, according to the experience and qualifications of the person appointed, but in special circumstances a higher initial salary would be considered. Applications, with the names of three referees, should be sent to the Dean, Guy's Hospital Medical School, London Bridge, S.E.1.

QUEEN MARY'S HOSPITAL, SIDCUP, KENT

General Dental Practitioner required for two sessions per week. Applications giving full details of two referees to the Group Secretary immediately.

PASS LIST

ROYAL COLLEGE OF SURGEONS OF ENGLAND

2nd L.D.S.

December, 1962

Valerie J. Beaton
J. D. Brammer
J. C. Bennett
R. F. Davey
D. M. Griggs
Rosalind A. Harvey
K. C. J. Hughes
J. M. G. Hunt
R. S. Hunt
A. J. Lakin
S. H. J. Lennane
K. M. Lay
F. W. Merrifield
J. V. B. Robinson
P. W. C. Sherwin
R. M. G. Watson

ROYAL COLLEGE OF SURGEONS OF EDINBURGH

F.R.C.S.

P. S. Firth

UNIVERSITY OF LONDON

2nd Examination in Dental Surgery

December, 1962

E. S. Baird
C. A. Brooks
D. P. Fleming Jones
T. L. Harrison
R. N. Hodivala
T. J. Martin
S. Orton-Jones
M. O'K. Pearce
Margaret G. Pearson
R. J. Ringrose
R. T. Stephens
R. F. Stevens
P. J. Worledge

UNIVERSITY OF CAMBRIDGE

Final M.B. Examination

Michaelmas Term, 1962

Part I—Pathology and Pharmacology

C. Chantler
C. N. Garstang
R. Kumar
A. D. Milner
W. A. Norman
M. C. Pearson
D. J. H. Richmond
A. S. Russell
J. B. M. Shepherd
B. D. O. Smith
S. M. Wood

Part II—Principles and Practice of Physic

C. D. Binnie
D. G. Fagan
J. R. Hockey

Principles and Practice of Surgery

D. J. Allan
C. D. Binnie
G. L. Feldmar
D. S. Holland
P. M. Leney
G. Stewart

Midwifery and Gynaecology

D. J. Allan
C. D. Binnie
C. E. Briscoe
M. G. F. Crowe
D. G. Fagan
J. R. Hockey
J. M. Hughes
R. G. M. Jones
P. M. Leney
G. Stewart

GUY'S STUDENT TO CHICAGO, 1963

Applications are invited from Students taking finals in March or June, 1963, for a clerkship in Chicago. The Clerkship can count as either senior medical ward clerk, senior dresser or special appointment.

The student may go for three months any time between July and December as convenient. The student will be given $600 by the Student Council of the University of Illinois for travel and free board and lodging.

The student will work at the Research and Education Hospital of Chicago where clinical material and teaching are of a very high standard.

Those interested can obtain more information from C. B. T. Adams. Applicants are asked to hand into the Medical School Office by 1st April, 1963, the following information.

1. Name, Age, Nationality and place of Birth.
2. Details of education up to now, including School, University, etc.
3. Details of their education completed at Guy's.
4. Outside interests, including sports, arts, etc.
5. Positions held in the Hospital, i.e., Societies etc.
6. Briefly state why you would like to go to the States and what you hope to benefit from this experience.

PAPERS BY GUY'S MEN

In order to make this list as complete as possible, Guy's men whose papers have not been noted in this column are asked to send the Editor details of their publication.

Amos, D. B. and another. Fractionation and radioiodination of mouse antiserum globulins. *Ann. N.Y. Acad. Sci.*, 1962, **101**, Art 1, p. 148.

Baker, R. W. R., Thompson, R. H. S. and Zilkha, K. J. Fatty-acid composition of brain lecithins in multiple sclerosis. *Lancet*, 1963, i, 26.

Butterfield, W. J. H. and others. Glucagon infusion test in bilharzial hepatic fibrosis. *Guy's Hosp. Rep.*, 1962, **111**, 321.

Clarkson, Patrick. Poland's syndactyly. *Guy's Hosp. Rep.*, 1962, **111**, 335.

Crabbe, W. A. Aneurysmal bone cyst and its atypical features. *Guy's Hosp. Rep.*, 1962, **111**, 347.

Freedman, P. Immunological studies in glomerulonephritis. *Guy's Hosp. Rep.*, 1962, **111**, 370.

Fry, John and another. The general practitioner and his practice. *Practitioner*, 1963, **190**, 150.

Gorer, P. A., Tuffrey, Maureen A. and Batchelor, J. R. Serological studies on the X antigen. *Ann. N.Y. Acad. Sci.*, 1962, **101**, Art 1, p. 5.

Jeanes, A. L. Observations on the mass vaccination of hospital staff and students. *Guy's Hosp. Rep.*, 1962, **111**, 329.

Lannigan, R. Puromycin aminocleoside nephrosis in rats. *Guy's Hosp. Rep.*, 1962, **111**, 378.

Lillicrap, D. A. Moeller's glossitis. *Guy's Hosp. Rep.*, 1962, **111**, 393.

Longmore, D. B. Improved artificial kidney. *Lancet*, 1963, i, 16.

Moynihan, F. J. Cortisone arthropathy. *Guy's Hosp. Rep.*, 1962, **111**, 388.

Swift, P. N. and others. Properdin content of maternal and infant blood. *Arch. Dis. Childh.*, 1962, **37**, 596.

Soothill, J. F. Studies on proteinuria with special reference to immunochemically determined differential protein clearances. *Guy's Hosp. Rep.*, 1962, **111**, 355.

van't Hoff, W. Familial myotonic periodic paralysis. *Quart J. Med.*, 1962, **31**, 385.

Wheatley, David. Evaluation of psychotherapeutic drugs in general practice. *Psychopharmacol. Serv. Cent. Bull. U.S. Dept Hlth.*, 1962, **2**, 25.

PERSONAL

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BIRTHS

BENSON.—On 28th December, 1962, at The Royal Bucks Hospital, Aylesbury, to Margaret (née Bluff, S.R.N.), and Dr. Peter Benson a sister for William.

BARKER.—On 9th November, 1962, at Mount Alverria Nursing Home, Guildford, to Laura (née Wyatt), and Stanley Barker F.F.A.R.C.S., a son (Adrian).

BREESE.—On 3rd December, 1962, at Holbeach Hospital, to Anne and James E. Breese a daughter (Katharine Anne), sister for Jeremy, David and Bill.

HAIN.—On 30th December, 1962, at Farnborough Hospital, Orpington, Kent, to Dr. and Mrs. William Hain a son (Richard, David, William).

O'BRIEN.—On 29th December, 1962, at The General Hospital, Otley, Yorkshire, to Pat and Shirley (née Chambers), a son (Christopher John), brother to Helen, Anna and Patrick.

GOWDY.—On 28th November, 1962, at Maresfield, Piper's Lane, Heswall, Cheshire, to Angela (née Godson, S.R.N., R.S.C.N.), and Donald Gowdy, Lieut./Cdr., R.N., a daughter (Joanna).

EDS. {W.G.R. S.M.W.

GUY'S HOSPITAL GAZETTE

A JOURNAL OF MEDICINE, SURGERY, DENTISTRY AND HOSPITAL NEWS

PUBLISHED FORTNIGHTLY

Vol. LXXVII. No. 1944 *26th January* 1963 *One Shilling*

PASSIM

Undercurrent

The emergency generators at Guy's have been in action once in the recent electricity supply crisis, while other less fortunate London hospitals have had to rely on ice-cream vans for their power; rueful support indeed for the oft-repeated plea for more widespread installation of emergency generators. This lesson is learned readily enough from our naturally fallible electricity supply but the medical profession has had other cause for reflection in the power-station workers' action. Deprived of full voltage, the country has instead been charged with high emotional tension, especially over the appeals to workers not to deny infants, emergency surgical patients and poliomyelitis victims of their "link with life". The appeals were of course valid, if over-dramatised, and hardships have been experienced, varying from operating lists postponed and ambulance radios off the air in East London to the demise of the three nurses stranded for half an hour in a lift at the National Heart Hospital.

The appeals made their mark and touched a sense of duty which the public feel towards the sick and their attendants, for many Londoners skimped electricity, and engineers diverted the supply to St. Bartholomew's to keep operating theatres functioning. However, the detached unconcern of some industrial leaders over hospital power supplies has brought outraged criticism from all levels of the medical profession. Naturally, we cannot condone wanton disregard for peoples lives, but surely righteous and outspoken moralising comes strangely from a profession which threatened a doctors' strike in 1959, and which displayed some high-handed action over nurses' salaries.

Savoyarde

The Saturday-night Hops although providing some light relief and a source of income for the various clubs who sponsor them are a make-shift arrangement, especially in view of the present, albeit temporary, accommodation and facilities. However, every species of any family has its own particular way of exploding the natural progression of the year, and for the students and staff of Guy's this

is by tradition the Clubs' Union Ball. This year it is being held on 6th February and has every promise of being as successful as in previous years. Nevertheless there must be a considerable number of students who have not as yet attended this diversion from the rather self-contained social life at Guy's. One unique feature is that it is always attended by members of the staff and old Guy's men, as well as students, and we hope that the mingling of the mighty with those who have yet to be promoted, will continue to an even greater extent this year.

It is still possible to obtain tickets and your attention is drawn to the letter on page 49. Once again it is to be held at the Savoy Hotel and if you have never arrived at the river entrance to anywhere—here's your chance.

All in Blue

Last week, Miss Johnson welcomed her sisters and guests to what must undoubtedly be one of the best dinners of the year. With the lights dimmed and the tables most attractively decorated (by a patient of York Clinic), a remarkably elegant menu was served in, unrecognisably, the nurses' dining room. This is belatedly the Sisters' Christmas celebration and it is a pity that they do not have further excuses during the year for social extravagances such as this. Although a little intimidating at first (rumour has it that the sister-hood tops 105) any misgivings were swiftly annihilated with the invaluable aperitif. The table-talk briefly analysed, judged and sentenced all aspects of Hospital life; for the benefit of the novices present a minor "Who's who" was related, and the candles burned still lower. The orations were few and brief. Matron made an admirable speech which included an entertaining account of some of her more amusing meetings, incognito and otherwise, around the Hospital. Mr. Slesinger told us that during his time as a houseman there were some *real dragons* among the sisters. (applause)

Then to the entertainment, performed by those who having escaped banishment after their escapades in the Christmas Show appeared with a variety of surprises, intended and otherwise. Brian Taylor again took charge of his notorious cast who were as ever, under-rehearsed but effective. The Lambs sang their lullaby including their Walkerian pièce de résistance ; the Sisters' Song was then resurrected with sundry improvisations calling for rapid promotion for several of the cast. Professor Atkins and Mr. Blaikley were warmly rebuked for their special interests and Drs. Joiner and Maclean for their academic idiosyncrasies. Other epics followed.

The purpose of the evening was prosperously fulfilled and for those who experienced it for the first time it was a magnificent introduction to what is for one night the " Blue Room ". All who experienced its conviviality will want to congratulate those who took part in its delicate organisation.

GUY'S DIARY

JANUARY

EXHIBITION			*Haematemesis.*
28th	M	1.00	Mr. BLAIKLEY. Clinical Lecture. *Some Interesting Cases of Endometriosis.*
29th	T	1.00	Professor ATKINS. Clinical Lecture. *The Nature of Radio-Active Substances.*
		1.00	Professor HERBERT. Dental Clinical Lecture. *Injuries of the Teeth.*
31st	Th	1.00	Mr. LAWRIE. Clinical Lecture. *Skiing Injuries.*

FEBRUARY

EXHIBITION			*Conjoined Twins.*
1st	F	1.00	Professor BUTTERFIELD. Clinical Lecture. *The Anatomy of Medical Research.*
		2.15	Combined Round. Dr. MACLEAN and the DEPT. OF PAEDIATRICS.
5th	T	1.00	Professor HUNT. Clinical Lecture. *Assessment of Gastric Function.*
7th	Th	1.00	Mr. GLOVER. Clinical Lecture.
8th	F	1.00	Dr. FORMAN. Clinical Lecture. *Alterations in Skin Colour.*
		2.15	Combined Round. Professor BUTTERFIELD and Dr. DEUCHAR.
9th	S	10.00	Departmental Round by Mr. R. A. FRANKLIN. *All Students Welcome.*
11th	M	1.00	Dr. MOYNAHAN. Clinical Lecture. *The History of Medicine.* Part I.—*Paleopathology. The Antiquity of Disease.*
12th	T	1.00	Dr. MOYNAHAN. Clinical Lecture. *The History of Medicine.* Part I. *Prehistoric and Primitive Healing.*

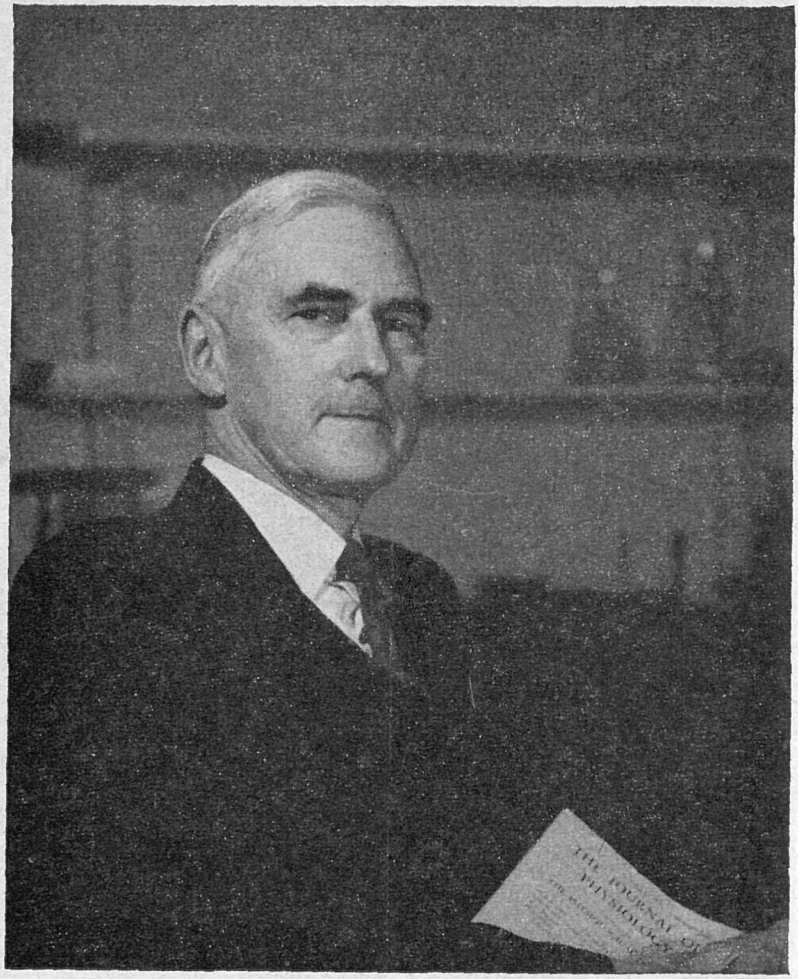
We publish below the list of titles of a new series of lectures in Applied Physiology, organised by Professor Hunt, to which all pre-clinical and clinical students are welcome. They are designed to allow students to learn about the scientific work done in the Hospital and it is hoped that as a result clinical students might associate themselves from an early stage with the scientific work of members of the clinical staff.

Applied Physiology Lectures—Spring Term, 1963

January 21st	Professor BUTTERFIELD.
Subject	*Sugar Tolerance Testing.*
January 28th	Mr. KINDER.
Subject	*Micturition.*
February 4th	Mr. SCHURR.
Subject	*Surgical Treatment of Pain.*
February 11th	Dr. MACKENZIE.
Subject	*Clinical Evidence on the Genesis of Movement and Tremor.*
February 18th	Dr. JOSEPH.
Subject	*Electromyography of Muscle Tone and the Upright Posture of Man.*
February 25th	Dr. DEUCHAR.
Subject	*The Cardiac Cycle and Heart Sounds.*
March 4th	Dr. DEUCHAR.
Subject	*Electrocardiography.*
March 11th	Dr. DEUCHAR.
Subject	*The Cardiac Output and Heart Failure.*

Professor W. R. Spurrell

AN APPRECIATION



Professor Spurrell retired from the Chair of Physiology at Guy's at the end of the academic year, 1962, and although he is now Professor Emeritus the change means that his active daily work at Guy's has been fulfilled after forty-eight years. There have been only two breaks in his continuous service during this time. The first was early in his career as a junior medical student when he left to serve in the Royal

Field Artillery in 1915. As a gunner officer he was one of the minority of young men who survived to come back to renew their studies in 1918. Amongst a group of unusually mature and enterprising undergraduates he stood out because of the apparent ease with which he tackled intellectual as well as practical problems. In those days everyone was in a hurry to get qualified and to make up for time lost during the war, but although Spurrell shared this urgency of outlook it did not prevent him from giving an extra year to take an honours course in physiology and to lay the foundations of what subsequently turned out to be his major work at Guy's. At heart he was a clinician and everyone looked forward to the time when he would bring the clarity of mind and his knowledge of physiology into the domain of surgical practice; his appointment as surgical registrar in 1927 was universally welcomed and there never was a happier combination than the firm with Frankie Steward as the Surgeon, Joey Hughes as the Assistant Surgeon and Rowarth Spurrell as the Registrar. Within two years his reputation as a clinician and as a teacher was outstanding. His own practical and academic successes were taken for granted by all his friends, and (characteristically) not noticed by himself, but as a teacher there can have been few people who ever had a greater facility for imparting knowledge—and certainly none who did it with such simplicity and modesty.

It was assumed, as a welcome certainty, that in the course of time Spurrell would be appointed to the surgical staff at Guy's, but to everyone's disappointment illness forced upon him the decision that he must give up clinical work that he loved so much. Anyone less able or less versatile and resilient would have sought an easy life, but Spurrell immediately set out to pursue a career in physiology and from 1929 to 1933 he worked with the late Professor McSwiney in the Physiology Department of Leeds University.

For many years up to 1933 physiology at Guy's had been associated with the name of Pembury, and it was indeed lucky for Guy's that M. S. Pembury was fully aware of Spurrell's aptitude in this field. Pembury had, in fact, been the first to stimulate Spurrell's interest in the subject. Thus, it came about that when Pembury retired Spurrell came back to Guy's to take charge of the physiology teaching and research in the Medical School, and as the head of that department he has served without a break for twenty-nine years. The unique knowledge of clinical medicine made him a specially happy choice for Guy's with its tradition for the application of basic science to the art of clinical medicine, and over the years no one has done more to integrate the pre-clinical with the clinical teaching in the school.

During the 1939-1945 period, Spurrell carried the main burden of the Department and in spite of his health he continued to do far more than his fair share of lecturing and teaching in practical classes. He, nevertheless, was always prepared to act as a subject for the experiments of his staff and interested himself keenly and critically in their work. He lectured beautifully and apparently without intellectual effort. The style of the man and the logical development

of arguments, driving his audience to the conclusion he wished them to reach, were unforgettable.

To his staff in the Department he was an ideal master. He was familiar with a wide field of the literature, and had the capacity to grasp and assimilate the central point. There can be few heads of departments who have successfully supervised postgraduate studies over such a wide field; vision, endocrinology, foetal growth, gastric function, respiration and dental physiology to name those which come first to mind.

In helping his staff to present their work he used his mind keenly and many must be grateful to him for the quality of their early papers. He was particularly interested in promoting the flowering of the minds of his B.Sc. students, and the many successes which they had were evidence of his wise control of their course, and are a constant joy to him. He left behind a tradition that these few selected honours students give to the teachers in the Department an important oppor-opportunity for influencing those who are likely to have special responsibilities in their professional lives. Many of those who have passed through his hands come to him many years afterwards for sound advice.

Spurrell's work as a physiologist and teacher of physiology is only part of his contribution to the School and Hospital. As a councillor in committee or as a friendly adviser in the informality of his own office his clear thinking and his kindness of heart have endeared him to his colleagues, and make him the trusted mentor of all his juniors. Whether as a Governor of the Hospital or of the Schools or as a committee member of the Medical or Dental or Nursing or Physiotherapy Schools he invariably brings a flood of clear-thinking, common-sense and kindness whatever the nature of the subject. We all hope that some of the leisure which he has denied himself in the past for the sake of Guy's will now come to him for his enjoyment in his retirement.

NOTICE

The Dental Department urgently requires further supplies of sound natural teeth. We are extremely grateful to the many dental practitioners who regularly send us teeth but there must be many others who do not know of our needs. We realise that some practitioners may feel that the number of suitable teeth that come into their hands is too small to make collection worth while. This is not so. We rely entirely on obtaining small numbers from many sources.

To have an adequate supply of natural teeth is of great importance in Phantom Head teaching as no completely satisfactory alternative has been found.

A. H. R. ROWE,
Senior Lecturer, Conservative Dental Surgery.

THE ASSESSMENT OF HEARING IN BABIES

by DR. MARY SHERIDAN

The two abilities which distinguish man from other higher animals are his constructive use of hand tools and his ability to communicate with his fellows in spoken language. The former depends upon vision and manipulation precisely co-ordinated by a thinking brain, i.e., one which can remember past experiences and plan ahead. The latter depends upon hearing and vocalisation co-ordinated by a brain which can recognise, understand and express its thoughts in verbal symbols or words.

The beginnings of spoken language

Reception, comprehension and expression of spoken language is such a highly complicated process that it is the last of the great biological skills to be developed. Before the child learns to speak he must first learn to listen, that is, he must learn to pay attention to the confused medley of "background" noise which continually bombards his ears, with the object of selecting from it and bringing into "foreground" prominence those sounds which are carrying speech messages. At birth the child is well equipped with the necessary apparatus to hear, but his brain is still completely inexperienced in listening. First he learns to appreciate that certain sounds which are frequently repeated in his immediate vicinity are associated with pleasant happenings, like feeding and being handled and made comfortable. Next he comes to discriminate nearby vocal sounds from other meaningful sounds because they form the accompaniment of his contacts with the human beings who care for him. This realisation stimulates the child to make his own social overtures in return. He begins to greet his mother with widely opened eyes, broad smiles, excited movements of his limbs and little gurgles and coos. This responsiveness prompts the delighted mother in her turn to talk to her baby face-to-face on every possible occasion. Very soon he makes attempts to utter vocal sounds of his own, first in single babbled sounds and later, about the age of six or seven months, in long strings of repetitive "syllables" which he practices as a spontaneous exercise even when he is alone. By the age of 11 or 12 months he is babbling loudly, tunefully and incessantly and he shows by his behaviour that he understands several words in their usual context, such as the names of his immediate family circle and of some common objects. A month or two after his first birthday he begins to speak recognisable words. By the time of his second birthday he is able to put two or three words together to make little sentences. This is the true beginning of spoken language.

Hearing for Speech

All sounds, including speech sounds, possess qualities of pitch, intensity and duration and are normally heard in space.

The acquisition of spoken language depends primarily upon adequate hearing over the entire "speech range", i.e., for sound pitches from approximately 100 to 10,000 cycles per second. For practical purposes these are somewhat arbitrarily divided into the *low* frequencies, i.e., those below 500 c.p.s., the *middle* frequencies, i.e., those between 500 and 2,000, and the *high* frequencies, those over 2,000 c.p.s. The frequencies under about 1,200 cycles are concerned mainly with the carrying power of speech, those over 1,200 with its intelligibility. The vowel sounds have their chief components in the low and middle frequencies, and the consonants their main components in the middle and high frequencies. Thus the middle frequencies are important both for vowels and consonants, for carrying power and for intelligibility, and adequate hearing over the middle frequencies is essential if the child is to learn to speak. Fortunately the middle and low frequencies are those which can most efficiently be amplified by hearing aids, while several of the consonants which demand hearing over the highest frequencies—p, sh, f, th, are comparatively easy to lip read, so that given adequate amplification and "auditory training", i.e., expert teaching to enable the child to make the best use of whatever hearing he possesses while encouraging him simultaneously to observe the speaker's facial expressions and lip movements, the deaf child nowadays can be greatly helped to acquire facility in the use of spoken language.

A quiet conversational voice reaches the ear of a listener at 3-4 feet, at average intensities of 45-50 decibels. The difference in intensity between the strongest vowel "aw" and the weakest consonant, the voiceless "th", is about 30 decibels.

Although every speaker has his own rate of utterance, even the slowest drawler cannot lengthen the duration of the "plosive" consonant sounds, such as p, t, d, k, g, which last only a fraction of a second.

The listener must therefore first be able to pay selective attention to a continuous series of phonetic units which rapidly play over eight octaves in pitch and 30 decibels in intensity, each unit of which endures only a fraction of a second. He must next be able to group these complex speech sounds into separate words and phrases, to match them against previous memories of similar spoken words and phrases, and finally to interpret their message. The normal child goes a long way in his learning how to do all this in the first 24 months of life.

Manifestations of Hearing in Infancy

Before we can recognise the manifestation of *abnormal* auditory and vocalising functioning in young children we must first be familiar with the characteristics of *normal* functioning, i.e., with what one might call normal hearing and speech behaviour. Growth and development are subject to compelling biological laws and all children must pass through the same stages in their progress to maturity. These are often known as the milestones of development, but I prefer to call them stepping-stones, because they mark, not so much the end of a phase of development, but rather the readiness for higher achievement. Every child progresses in the same direction, but in his own way and at his own pace.

For the *first 4–6 weeks* the child's response to sound appears to be entirely reflex. We can observe this automatic response in several ways. When a sudden loud sound occurs in his vicinity he immediately reacts with a quick "startle" which affects his whole body. He stiffens his spine and extends his arms and legs and fans out his fingers and toes. A moment or two later he usually begins to cry. It has been found that a pure-tone of about 60 decibels judicially applied near his ear will produce a definite responsive blink of the eyelid—but this test requires special, rather cumbersome apparatus. When he is awake and making little fussy movements, if a small bell is rung very gently a few inches from his ear, but outside his range of vision for 3-5 seconds his movements will "freeze" and sometimes his eyes will move towards the same side as the bell. Although this response is very dramatic when it occurs it is unfortunately not constant. At about three or four months, however, the eye-turn reappears in somewhat altered form. This time it is the result of true listening and it is evidence that the child is now at the beginning of auditory understanding. During the period of reflex response to sound the child is by no means silent. He cries loudly when he is uncomfortable and utters little guttural noises when he is content. These vocalisations are also reflex. They occur in hearing as well as deaf babies. From about *4–6 months*, when the normal baby begins to demonstrate his ability to listen and to vocalise in appropriate social situations, the deaf child's inattention to sound and meagre vocalisations become increasingly obvious.

From about *3–4½ months* therefore, it is possible to obtain some idea of the child's meaningful hearing, first by observing his behaviour when his mother speaks to him, and secondly by applying tests which employ soft, homely, meaningful sounds about 6–8 inches from the ear, and on a level with it. Each stimulus should be applied first to one ear and then to the other for about 2–3 seconds with an interval of 2 seconds before the sound is repeated. The same test material is used for children of 6–12 months (see below) and the child must not be allowed to see the sound making objects. The usual reaction is a stilling of activity, a listening expression with a slight frown of concentration, and then a deliberate movement of the eyes towards the direction of the sound. There may also be rather vague movements of the head. About 4 months the head definitely turns to the sound, but the eyes usually do not fixate the testing object itself but tend to seek the nearby human face. *About 4½–6 months* the sound making object itself seems to be recognised as the child visually locates it and looks at it with great interest for some seconds before his eyes seek once more for the human being.

Babies over six months are comparatively easy to test once the necessary skill has been acquired.

TEST PROCEDURE

In all the following tests it is important to remember that the sound-making instrument must be kept well outside the child's (C) field of vision. It is important therefore that the examiner (E) must not station himself where his movements or his shadow are visible to C. Light touches, vibrations of the air, reflections in shiny surfaces even

perfumed cosmetics may provide clues to intelligent deaf babies who have already learned to make efficient use of their visual fields. The sounds must be produced well to each side and not immediately above or behind the head. Even some adults have difficulty in locating sounds in mid line between the ears.

The mother (M) should be asked to sit C on her knee with his back against her chest facing squarely outwards. If E has an assistant who can apply the sounds under his direction, E will find it more instructive to sit in front of C where he can observe C's slightest facial expressions and movements. If he is alone E must wait until C's attention is directed straight ahead. (When E has acquired the necessary experience he will be able to modify this procedure in various ways, e.g. applying sounds himself from the front, without invalidating the test results, but it is not advisable to attempt such modifications until the technique here described has been thoroughly mastered.)

The same homely testing instruments are used for all babies because they produce sounds likely to be familiar to them. They consist of a soft, high-pitched rattle, a small bell, a cup and spoon, a scrap of tissue paper and human voice. The rattle and bell are shaken very quietly, the tissue paper rustled softly, and the spoon merely stroked round the rim of the cup. The sounds should be applied for 2 seconds with 2 second intervals. Since it is important to make sure that C has useful hearing over the entire speech range, it is essential to test him with low-pitched vowels and high-pitched consonants. The most useful sounds for the purpose are the vowels OO and OH and the consonants p, t, th, s, spoken in a quiet conversational level. They can be associated with the child's own name in this way, "OO-OO, Tom", or "Hello Tom"—and later "Tit,-tit"—"Ps,-ps" "pth-pth" repeated rapidly 3–6 times.

At six months the sounds are applied at 1½ feet from the meatus and on a level with it. At this age C may be expected immediately to turn his head and locate the sound source accurately on a horizontal plane, but not always above and below this plane. When the sound is repeated on the opposite side C will promptly locate it in the new position, and he will continue to do this from side to side until the game becomes boring. Occasionally he may not react to the first stimulus. E should then wait 2 seconds and then repeat on the same side. Usually the second application evokes the expected response. Sometimes, however, after the sound has ceased and in the interval before E repeats it C will turn slowly and deliberately to the appropriate direction. This delayed response is characteristically seen in immature babies and also in retarded infants up to 12 or 15 months.

At 8–12 months the sounds are applied at 3 feet from the meatus, and C may be expected immediately to locate them at angles well above and below the horizontal plane, usually with a delighted smile and often with a quick outstretching movement of the hand towards the instrument.

If the responses here described are not obtained on both sides, impaired hearing must be suspected. If it is possible to retest within four weeks this may be done; if not, it is advisable to seek expert otological

opinion without further delay, especially if the mother voices the slightest suspicion that her child is not hearing normally.

Limitations

These tests are very useful up to about the age of 13 or 14 months after which more complicated procedures (and usually more skilled testers) are necessary. Even so they have definite limitations. Although they identify severe deafness and provide good indication that C's ability to hear and to listen is probably adequate for his ultimate acquisition of spoken language, they do not rule out partial deafness. Normal hearing over the entire speech range can only be certain when C spontaneously produces the full range of phonetic units of his mother tongue.

Conclusion

It follows that any child who is known to be "at risk" of impaired hearing by reason of his *family history*, or because he was exposed to some significant unfavourable experience in his *prenatal*, *perinatal* or *postnatal* life, or any child *whose parents suspect that he is not hearing normally*, or who is *unusually late in talking*, all these should be followed up at regular intervals until a diagnosis can be made one way or the other.

It needs to be kept constantly in mind that children do not grow out of deafness, but they certainly will grow into dumbness if their hearing disability is not recognised and treated during the first two or three years of life.

NOTICES

Pupils' Physical Society

Laidlaw and Beddard Prizes

These two prizes, of £5 each, are offered for the best paper on a subject of pathological, medical or surgical interest, and for the best paper on the subject of a clinical case, or cases, respectively.

These papers will be read before a meeting of the Pupils' Physical Society on 30th April and should be brief, lasting about 10 to 15 minutes.

Titles and brief abstracts of the papers should be submitted to the Medical School Office by 13th April.

THE RESIDENTS' PLAY, 1963

The Residents' Play " Dr. Bo ", will be performed each evening at 7.30 p.m., from Tuesday 19th to Friday 22nd of February. Applications for tickets should reach the President of the Residents not later than 10th February.

Every effort will be made to allocate seats fairly although due to the restricted capacity some disappointments are inevitable, for which we apologise in advance.

As is customary no charge is made for admission and the high cost of production must be met entirely by donations which will be very gratefully received.

T. A. H. ENGLISH,
President of the Residents.

WILLIAM BLAKE

—the enigma

by P. M. A. BOWDEN

Very occasionally in the history of pure art there appears a person who is not intrinsically a product of his time. These people have no heritage or true successors, their work being applicable to the artistic product of any era. This is a history and personal comment on the work and life of a man who was a master engraver and one of the great English poets. This man had a strange humility but his life was centred around his understanding of his own exceptional talent and the acceptance of his visionary experience as an integral part of his make-up.

Born in 1757, Blake professed to have had his first vision at the age of seven. He entered the art school of H. Pars, in the Strand, three years later. As a child and particularly at this school he idolised Michaelangelo and Raphael. His parents were unable to afford the price of an artist's apprenticeship and bound him over to James Basire, master engraver to the Society of Antiquaries. The fee was fifty guineas. William Blake willingly submitted himself to seven years as a nameless copper plate engraver and was happy working within the limitations of a journeyman engraver. Never throughout his life did he despise the title of 'workman'. At the termination of his apprenticeship Blake was employed in sketching monuments in Westminster Abbey. Four years later he had completed a series of *Poetical Sketches* which contained verses on the seasons, an imitation of Shakespeare's King Edward III, *Prologue to King John* and many short essays amongst which was *The Couch of Death*,

> '*O voice, that dwellest in my breast, can not I cry, and lift my eyes to heaven ?*'

This latter work gives a foretaste of Blake's visionary writings to come. He next commenced study under Moser in the Antique School of the Royal Academy, the latter having only recently opened.

In 1780, Blake exhibited in the Royal Academy, his writings of this time showing that he was aware of his potential mastery and freedom. He worked for a time for the artist Stothard and was introduced by him to Flaxman who expertly guided Blake's talent and was to remain a friend for many years. Flaxman and the Rev. Henry Mathew paid for the printing of Blake's original *Poetical Sketches* in 1783. Two years before Blake fell in love with 'a lively little girl,' Polly Wood, but she rejected him and some weeks later Blake fell ill. He recuperated at Kew in the house of a vegetable merchant, the merchant's daughter Catharine consoled Blake, and he married her at Battersea in 1782. At this period Blake opened a print-seller's shop, his brother Robert being his pupil. This is when *Songs of Innocence* were written and within ten years he completed *Songs of Experience*. These two works were published simultaneously and on the frontispiece Blake described them as, 'showing the two contrary states of the human soul'.

INNOCENCE:

"Little lamb, who made thee ?
Dos't thou know who made thee ? . . . .
For He calls Himself a Lamb
He is meek, and He is mild
He became a little child"

EXPERIENCE:

'Little Fly,
Thy Summer's play
My thoughtless hand
Has brush'd away.

Am not I
A fly like thee ?
Or art thou not
A man like me ?'

The Tyger, one of Blake's best known poems, is a part of *Songs of Experience* and although it is of indisputable merit it has been over estimated in comparison to his other works. Blake uses rhetoric to form the basis of his poem.

'And what shoulder, and what art,
Could twist the sinews of thy heart ?
And when thy heart began to beat,
What dread hand ? and what dread feet ?'

Could fetch it from the furnace deep ?
And in thy horrid ribs dare steep
In the wall of sanguine woe
In what clay ? and in what mould
Were thy eyes of fury roll'd ?'

The second of the two preceding verses was deleted from Blake's final manuscript of *The Tyger*. The meticulous care with which Blake composed his work is seen in poems of which the rough drafts are preserved. First a crude version, or a single stanza was written around which his idea was to form, succeeded by alteration and

rearrangement, correction and deletion, until finally a perfect form was achieved. On the death of his brother Robert, in 1787, Blake closed his print shop. Blake had devised a new method of printing the secret of which he said was revealed to him by the spirit of his brother. The texts and surrounding pictorial embellishments were executed in negative on varnished copper plates which were subsequently etched in a bath of acid until the whole design resembled a stereotype. Impressions were printed in various schemes of monochrome and afterwards were tinted by Blake in water colour. Thereby each copy produced possessed originality.

Blake then engraved marginalia for Lavanter's *Aphorism's*, Swedenborg's *Wisdom of The Angels* and he commenced work on *The Prophecies*, including, as part of the text, *There is no Natural Religion* and *All Religions are One*. Blake wrote this latter as a number of original truisms and by a series of arguments he deduced Principle Seven. 'As all men are alike, 'tho infinitely various; so all Religions, and as all similars have one source, the True man is the source, he being the Poetic Genius". In 1790 Blake produced *The Marriage of Heaven and Hell* whence Blake imagined that from contraries, attraction and repulsion, spring what religions call Good and Evil. Good is the passive that obeys reason. Evil is the active springing from Energy. Good is Heaven, Evil is Hell. In *The Voice of the Devil*, Blake tells of a vision on the abyss of the five senses when he saw a devil which was folded in black clouds and which etched, with corroding fires, on a rock—

'How do you know but ev'ry Bird, that cuts the airy way
Is an immense World of Delight, clos'd by your senses five ?'

In this vision is contained the question which was so profound to Blake, often being posed in the rhetoric of his work. In *There is no Natural Religion*, his third argument was, 'From a perception of only three Senses, or three Elements, none could deduce a fourth or fifth'.

In 1793 Blake engraved on small copper plates his series of 'emblems', *For Children : The Gates of Paradise*. These works mimic the Emblem books of the late 16th and early 17th century and a few years later Blake revised this edition and named it, *For the Sexes*. Much of Blake's engraving represents effort which was not financially rewarding, and his industry was unremitting not being motivated by the drive for recognition. This was a prolific period for Blake, he wrote the books of *Los*, *Ahania*, *Urizen*, *Europa A Prophesy*, all between the years 1794 and 1795. The artist next executed designs for Bürger's *Night Thoughts*. Blake next completed *Vala or The Death and Judgement of Ancient Man a Dream of Nine Nights*. *The Four Zoas* is one of the longest of Blake's writings and forms a link between his earlier and later prophetic works, the successive revision showing the initiation of a new set of mystic symbols and ideals which culminated in the books of *Milton* and *Jerusalem*. In 1800 Blake left London for three years to live at Felpham on the Sussex coast, with a friend William Hayley. Hayley wanted to harness Blake's genius to his own pitiful poetry but Blake returned to London exasperated by Hayley and he embarked on *Milton*, his major symbolic work. The preface of *Milton* commences 'The stolen

and perverted writings of Homer and Ovid, of Plato and Cicero, which all men ought to condemn, are set up by artifice against the sublime of the Bible; but when the new age is at leisure to pronounce, all will be set right, and those grand works of the more ancient, and consciously and professedly inspired men will hold their proper rank, and the Daughters of Memory shall become the Daughters of Inspiration'. *Milton's* verse opens thus :

> '*And did those feet in ancient time*
> *Walk upon England's mountains green ?*
> *And was the holy Lamb of God*
> *On England's pleasant pastures seen ?*

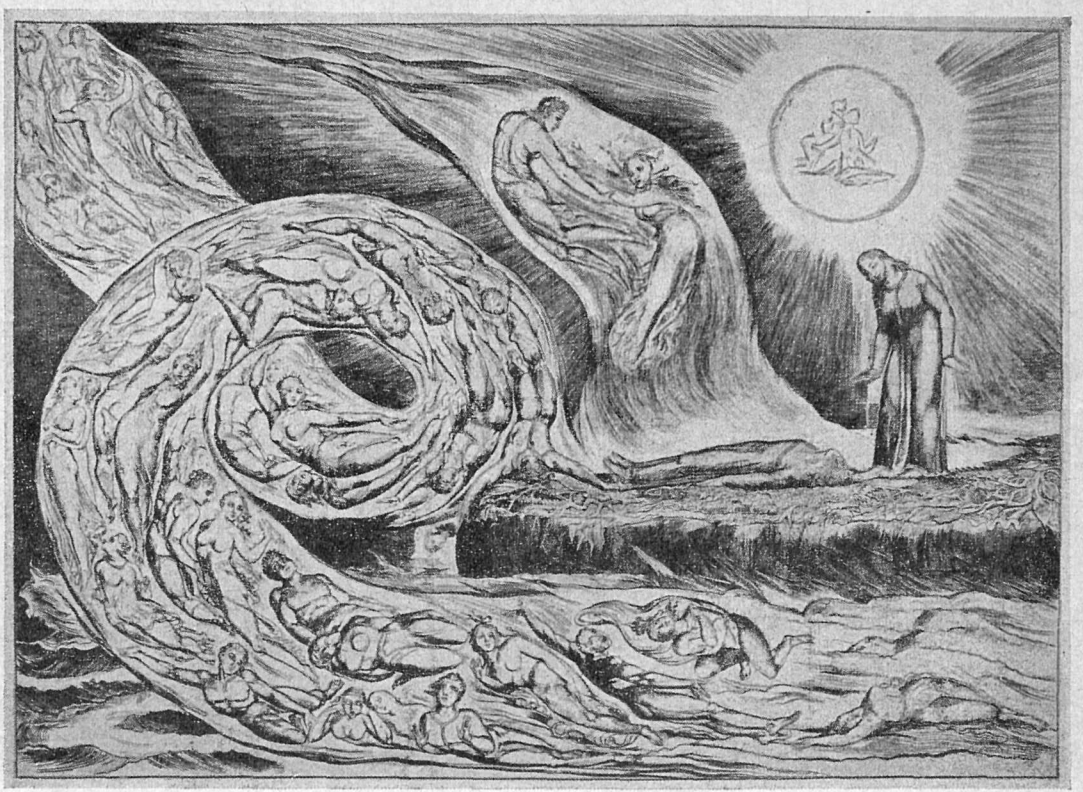
—the everlasting rhetoric of Blake.

In a recent review of a book, *The Ancient Druids*, by A. L. Owen, the reviewer concludes, 'Finally there is the odd case of the visionary William Blake. He convinced himself that Adam was a Druid and that the early events in the Bible actually took place in Britain. Only when the Druids became utterly corrupt—Blake reassured—was Jerusalem transferred miraculously to the Middle East. The ancient stone rings, supposedly built by the corrupt Druids, Blake called the mills of Satan'. So, when we sing the hymn Jerusalem, with its reference to 'dark Satanic mills', we may reflect that its author was originally thinking of the kind of Druids who are represented as calm onlookers in that terrific 17th century print'. The print referred to is *Milton*. Before the publication of *Jerusalem* and *Milton*, Blake wrote to a friend, 'It will not be long before I shall be able to present the full history of my spiritual sufferings to the dwellers upon earth, and of the spiritual victories obtained for me by my friends'.

In 1803 Blake had an affray with a dragoon and a warrant was issued for his arrest on a charge of sedition. He pleaded not guilty and was tried at Chichester Quarter Sessions in January, 1805, and was acquitted. Three years later he exhibited his pictures, and in this year he also published a *Descriptive Catalogue* in which Blake says, 'Names alter, things never alter. I have known multitudes of people who would have been monks in an age of monkery, who in this deistical age are deists'. In 1810, Blake reissued the *Gates of Paradise*. About this time Flaxman, when visiting Blake one evening, discovered the artist and his wife lying naked in front of a large fire. Blake told his friend that his wife and himself were playing Adam and Eve. Flaxman, embarrassed, stormed out and reported the event to the group of artists who followed Blake's work. As a result of this episode Blake went completely out of favour and remained in solitude for eight years. William Blake was forgotten and little is known of his work during these years of obscurity. He was rediscovered however, on his publication of leaflets on Virgil and Homer, Blake again defaming these demigods; the work comprising a number of small woodcuts which have great aesthetic value. The *Book of Job*, next of his works contains the tale of Blake's life and struggle. Catherine seems to have aided her husband in colouring the prints to this book. There are four issues of the book, each being slightly different from the others, and containing twenty-one plates. Each plate comprises a water coloured engraving surrounded by marginalia and phrases

The Whirlwind

of Lovers



(Illustrations reproduced by kind permission of Faber & Faber Ltd.)

from the more authoritative *Book of Job.* Inevitably Blake included his own prophetic addenda. Much significance is attached to the disparity between these plates to defame Blake but one of the hallmarks of his work was surely his inconsistency. His time was not in great demand and his work was only executed to satisfy himself. After the masterly and dramatic lines of *Job*, Blake, at the age of 69 was commissioned by Linnell to perform the stupendous task of illuminating the text of Dante's *Inferno.* One of these plates, *The Whirlwind of Lovers*, is unsurpassable in engraving for flowing movement and use of the human form to create a plastic beauty. The picture comprises a great whirlwind rising out of the sea, the substance of which contains innumerable bodies spiralling into the black sky. As in all the etchings to Dante's books, the Angel and the traveller stand watching the scene. It is as if the whirlwind contained a vast supplication, on behalf of its marine sufferers, to the traveller who is lying prostrate. The Angel who guides the traveller through the inferno stands on a rock. His attitude is of acceptance of the situation, the sufferers meriting the circumstances in which they must exist. The lovers in the whirlwind are in various attitudes of caress, the reward for lechery being to pass eternally from the sea to the sky, an endless prolongation of their heineous love: even the distorted sun contains the image of an embrace. The whole is a misassemblage of flesh; an unending copulation of incongruous forms. One can visualise the blue veins, moles, warts, creases and wrinkles, grotesque movements; Hade's licking tongue, red lips, white buttocks, skin unending, hairy and hairless, white, red, brown and pink. The Whirlpool of Lovers is a terrible justice, a mess like the Lawrentian love for which the lovers are condemned. The whole is pathetically tortured, possessing an action and continuation, the whirlwind withdrawing the lovers from the abyss of the sea and transmitting them into the black inferno, the heavens of their hell. William Blake worked on these engravings with the same ardour as ever and with ever increasing technical skill. He died in August, 1827, while engrossed in his supreme challenge of producing plates to Dante's great spiritually symbolic work.

Blake did not court publicity and fame. He frequently spoke of his writings and engravings as perfection, he followed no one and no one has tried to imitate him. He was intensely religious and yet often wrote of the dreadful abyss of religion. Blake described himself as of spiritual things, not of natural; of things known only to himself and to spirits good and evil, but not known to men on earth.

'Grown old in love, from seven to seven times seven,
I oft have wish'd for Hell, for ease from Heaven.'

William Blake was a poet and artist whose simplicity and perfect beauty of expression completely overshadowed the facet of his visionary work; schizophrenic perhaps, but which has often puzzled the discerning critic. The more official guardians of Blakian tradition have ascribed many motivating causes to Blake's work. They have dissected it and mutilated his creations so as to understand him as a visionary. This detracts from the work of a man whom it is better to regard as a lover of simplicity, and his work should be interpreted

in this light. To try to explain a man of so many ideals and conflictions would be fatuous. Only rarely does a solitary genius arise and English literature is fortunate that it can boast of such a man.

There remain many original copies of Blake's work but, unfortunately, most are in America due to the past apathetic attitude of the custodians of art treasures in Britain. However, there is an excellent, though small, collection of Blake's engravings in the Tate Gallery.

The delicacy and tenderness of Blake's act and the simplicity of his own life are apparent in the idealism and purity of this last quotation :

Seek Love in the pity of other's woe,
In the gentle relief of another's care,
In the darkness of night and the winter's snow,
In the naked and outcast, seek Love there.

CRITICISM

Warlingham Park Hospital Art Exhibition at the Mermaid Theatre, and the Quodlibet Society's meeting of December 4th, 1962

by MARK RAKE

Accused of being *intellectual*, *snobbish*, *pseudo* or just *bumptious*, the Quodlibet Society (whatever you want) continues to hold free discussions after dinner. The basic idea of this society is to enable members of the Hospital to listen to authoritative speakers and express their own views on the subject in an informal manner.

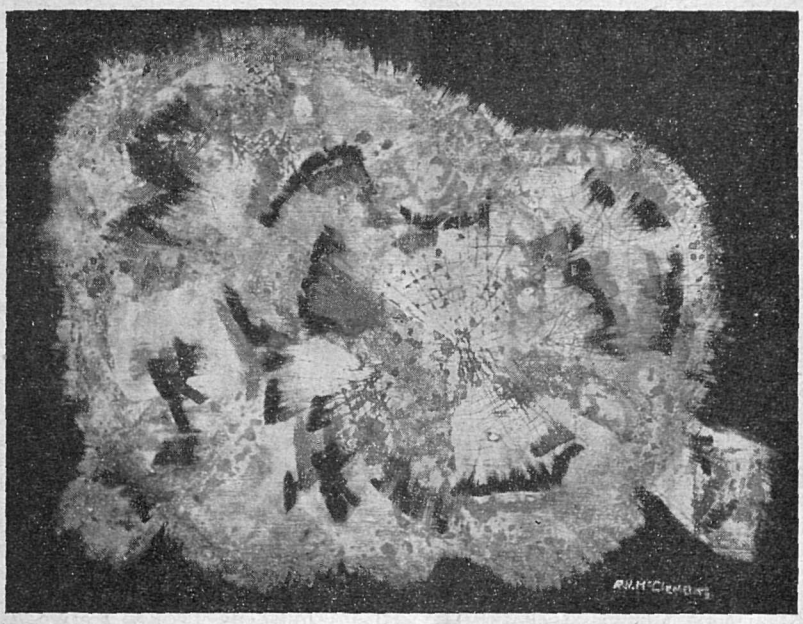
These ideas were uppermost in our minds when, on 4th December, 1962, Mrs. Jan Glass was asked to speak on "Art Therapy", a subject close to students' activities and yet far enough away to allow for a general discussion.

The twenty or so members who struggled through the fog to listen to Mrs. Glass were well rewarded by a subject hardly touched upon in the course at Guy's, but by its very nature, of interest to all medical and dental students who in their careers as psychiatrists, general practitioners, or in their own personal lives will be dealing with problems of expression.

The meeting was arranged to coincide with an exhibition of paintings at the Mermaid Theatre, by members of the Art Therapy Unit at Warlingham Park Hospital. Illustrations for this article are taken from this exhibition.

In many people's mind art therapy is perhaps a rather poverty-stricken sister of that enormous organisation, the Occupational

Therapists (where are they at Guy's—surely it might help to pass the time for the patients who "only fade away" ?) The difference, which is enormous, lies between the teaching of a craft, such as basket-making, and something which is dynamic, personal, creative, and also a means of communication. To judge a work solely on its subject matter is what Mrs. Glass called the "scientific approach" where the pictures are used as a means of diagnosis only.



[55] "*Explosion*" *by Robert M.* (*Oil on board*).

If such a thing as therapy existed then one must not take into account purely the subject matter but rather the whole experience of making a picture. To create something is a valuable experience especially when one's confidence is already decreased by external and internal stresses. Not only is this a means of communication, it is a step which may increase and strengthen one's confidence, gain insight into one's moods and, possibly, bring to a conscious level, feeling revealed by this means of expression. [55]

Relief is achieved also by the fact that one is working in a safe area—the canvas. "One can work through past experiences and in a space of minutes destroy and rebuild, murder and create, love and hate, suffer and rejoice in them". [29] How many of the artists whose work is now out of range of even the wealthiest consultant go through these experiences ? Surely all, and not only in painting but in poetry and music. This is one of the essentials of any work of art—it is an experience which has, in the hands of a master, been able to communicate itself to the audience. It does not mean that the experience of the artist and audience need be the same but the

closer these two are knit the greater the picture becomes in the eye of the beholder. This potentiality is in us all if we accept that any mark on paper is an extension of oneself. [44] Andre's "Woman" illustrates this particularly well.

[29] "*On the Sea Shore*" *by Esme* (*Gouache*)

How can this concept of art be achieved by "Art Therapy"? Mrs. Glass suggested that first, barriers must be broken between this concept, the "scientific approach", and the teaching of a craft. Secondly, there should be a place to work, in which freedom of expression is possible, and where the imagination can be stimulated. Valuable too is the possibility of a variety of techniques—since that medium which is suitable for one may not be for another.

Another essential is free communication between members of the group as this may stimulate and engender expression. This is achieved at Warlingham by placing the pictures around the corridors so that those who look and those who don't will still be looked at by the pictures.

By all these means one may realise in a patient his own form of expression and thereby bring him into contact with reality. This may be considered to be one of the main aims of psychotherapy of which art therapy is obviously a large part.

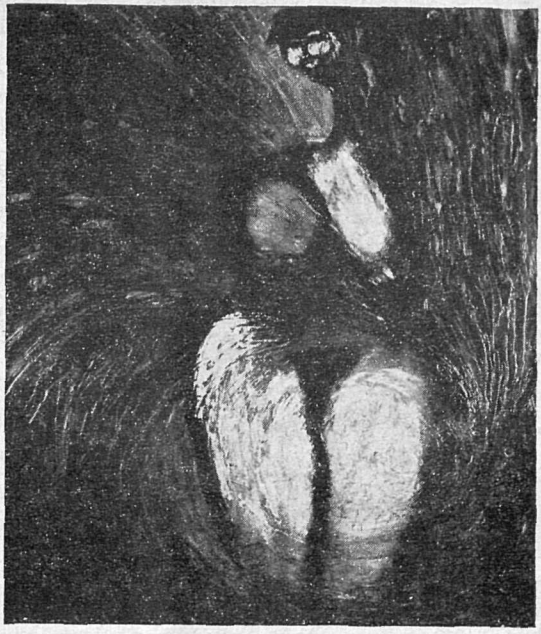
Stimulation of interest is another part of the function of art—a stimulation to dig deeper and this is, I think, admirably achieved by the exhibition at the Mermaid. A lot of the pictures are hung so that one cannot see them—either in the dark, or twelve feet above one's head. Despite these setbacks this exhibition is a worthy experiment and should have stimulated vast audiences to deeper thought both about art therapy and art in general.

[44]

"Woman"

by Andre.

(Oil on board.)



As announced in Passim *in our last issue, we introduce a new column of criticism, in which Guy's students look at events beyond the Hospital walls and where Guy's events receive outside comment.*

On Tuesday, 29th of this month, Guy's Hospital Theatre Club appear at the London University Dramatic Society Festival with the one-act play "TRICOLOR SUITE" by Peter S. Preston. The Festival continues on January 30th and February 1st and 3rd at the University of London Union in Malet Street, and we hope in our next issue to publish a review of the event.

In the following issue of 23rd February we plan to feature the London Medical Orchestra who are performing Dvorak's 8th Symphony at St. Botolph's Church, Aldgate, on Thursday, 7th February. This work will be repeated at a concert in May when Hepzibah Menuhin joins the orchestra under Sir Adrian Boult to play Beethoven's 4th piano concerto.

CORRESPONDENCE

Letters to the Editor of the Gazette

Metric v. Avoirdupois

SIR,—Your correspondent, Stella Avis (*Gazette*, 12th January), seems to think that the difficulties encountered in the conversion of apothecary (avoirdupois) weights and measures to the metric system are confined to the paediatric wards. Let us assure her that the problems are far more acute and complicated in other departments, not least the Pharmacy.

The difficulties experienced arise first from the fact that the equivalent of 1 grain is not a simple figure. It is 64.799 mgm., not as your correspondent states, 60.799 mgm. Would prescribers be prepared to write 97.1985 mgm. when the usual dose of 1½ grains is required ?

In the case of fluids the position is further complicated by the age old practice of using domestic spoons as measures and regarding a teaspoonful as being equivalent to 60 minims. The metric equivalent of a teaspoonful is even less precisely defined; 3.5, 3.6, 4.0 and, due to the American connections of many manufacturers, 5.0 ml. are all used by different firms to denote the volume contained by a teaspoon or one fluid drachm.

Pity, then, the pharmacist who has to label elixirs, syrups and suspensions particularly when the prescriber decides to give a different dose from that contained in 3.5, 3.6, 4.0, 5.0 ml., 1 fluid drachm or one teaspoonful of the standard preparation.

The remedy lies not in arbitarily and uni-laterally deciding to change over to the metric system on a given date (one hospital did this and found themselves in considerable difficulty) but to wait, as patiently as may be, for an authorative and legal ruling on what may or may not be taken as the correct equivalent; to accept inevitable but recognised approximations but, best of all, to learn, think, write and work in metric.

Yours etc.,

J. MOORE,
Chief Pharmacist.

S. F. IZZARD,
Deputy Chief Pharmacist.

The Pharmacy,
Guy's Hospital, S.E.1.

SIR,—I do sympathise with Miss Stella Avis when, referring to the use of Metric measures, she asks "How are we to achieve order out of this apparent chaos ?" How indeed ?

This chaos is being deliberately created by those who wish to convert our country into an offshore island of Europe, and who are striving to convert our way of life into an imitation of the so-called European civilisation. For many generations our physicians, pharmacists and nurses have prescribed, compounded, and administered medicaments in the "melodious and mediaeval" units mentioned in your Editorial. Who wants the change ? Not the doctors, who will continue to prescribe as they were taught, nor the Pharmacists who will be burdened with all the inconsistencies mentioned by Miss Avis, plus many more computations, nor the Nurses who know that one drachm and half a fluid ounce are good British doses. The younger generation of doctors and pharmacists want the change only because their teachers cannot be bothered to teach them the correct British measures.

This Metric Muddle of mg.'s, MIL's, decimal points and O's will lead to many errors which may well lead to incorrect dosage at the best, and to fatalities at the worst. The mls may grind slowly but they will grind exceeding small.

This metricisation is all part of our Europeanisation just as the daily forecasts by the B.B.C. (or should it be E.B.C. ?) that temperatures will "rise to minus 3 degrees".

We are told that the drug houses must issue their products in the metric system for the purpose of their export trade, but that need not affect our modus operandi in this country. We export to India and Pakistan but we have not found it necessary to become Buddhists or Moslems.

Yours etc.,

J. S. CLARKE.

Ashcombe Pharmacy,
Weston-Super-Mare.

The Clubs' Union Ball

SIR,—The Clubs' Union Annual Ball is being held this year on Wednesday, 6th February, at the Savoy Hotel. I would like to remind the people who have already bought tickets, and advise those yet to do so, that a table plan is prepared and that it is advisable to book places early to avoid disappointment. Tickets are available by post from Mr. J. Goodliffe, Appointments Bureau, Guy's Hospital Medical School, London Bridge, S.E.1.

It is hoped that a cabaret will be provided from the cast of this year's Christmas Show. The Ball is being held in the Lancaster Room and Parlour of the Savoy Hotel and guests are asked to arrive at the River Entrance.

I hope that the evening at the Savoy Hotel will have even more to offer than on past occasions.

Yours etc.,

MICHAEL SMITH,

Hon. Secretary, Ball Committee.

Guy's Hospital Clubs' Union,
Guy's Hospital Medical School.

REVIEWS

Little Club Clinics in Developmental Medicine, No. 7.

LESSONS FROM ANIMAL BEHAVIOUR FOR THE CLINICIAN. Edited by S. A. BARNETT. London: National Spastics Society (Medical Education and Information Unit), in Association with William Heinemann (Medical Books) Ltd. 1962. Pp. 51. *Price* 12*s.* 6*d.*

This is a well produced collection of five essays (and a 'postlude') edited by S. A. Barnett, Senior Lecturer in Zoology in the University of Glasgow. The editor, well known for his studies on rat behaviour, also contributes the first essay. He draws attention both to modern definitions of 'instinct' and 'intelligence' and to the interrelations of heredity and environment in the development of behaviour. The other contributors discuss 'The effect of prenatal and early postnatal experience' (W. R. Thompson), 'Some effects of stimulation in infancy' (S. Levine), 'Sensitive periods in the development of behaviour' (R. A. Hinde) and 'Principles of primate learning' (H. F. and M. K. Harlow). All the contributions are authoritative but for the novice in this field (the reviewer is one) do not make easy reading for they are written in the style of 'review' papers, terse, but with full bibliographies.

In the 'postlude' Dr. J. Bowlby echoes the warnings expressed by most of his fellow contributors on the dangers of extrapolation from one species to another and eventually to man. Yet if we believe that such animal studies provide lessons for clinicians such extrapolation is inevitable. In the present state of our knowledge it seems that the most immediate lessons come from the study of primates and, as man belongs to this order, this is not surprising. The authors of the essay on primate learning do not have the same inhibitions in drawing parallels with human behaviour as do some of the other authors.

Dr. Bowlby remarks that of the lessons to be learnt from animal studies 'one of them is inconvenient for those professionally concerned with the healthy development of children. It is the caution we must exercise before dubbing experiences favourable or unfavourable.' It is to be expected that some other biological lessons in this field will turn out to be equally inconvenient and not only to those professionally concerned with the upbringing of children. Perhaps the most inconvenient biological concept, and not at all irrelevant to the matters under discussion, is that throughout the animal kingdom parental care is concerned not only with giving the offspring a satisfactory start in life but a better start in life than the offspring of the other parents with whom the adults compete

both for breeding and nesting sites and for food suitable for the young. Equality of opportunity is the antithesis of parental care. Monogamy too can be shown to have a biological basis related to parental care and is by no means the preserve of some human societies. To those to whom equality of opportunity is an essential political tenet and to those who regard monogamy as ordained for man these biological facts are extremely inconvenient. They are usually countered by the claim that, in his behaviour at least, man is unique and that the rules of the animal kingdom do not apply to him. If you are so minded this book is not for you. If, however, you believe that man shares with animals not only their structural basis, their physiological requirements, their liability to infection and disease but also their evolutionary history then you will concede that some common basis of behaviour is also likely to exist and that the study of animal behaviour, correctly interpreted, will be as valuable as is reference to animals in other branches of biology and medicine. To such as take this latter view the book will provide an introduction to present thought about such matters.

G.E.H.F.

THE DENTIST'S HANDBOOK ON LAW AND ETHICS.

By W. R. TATTERSALL, H. D. BARRY and E. EDEN. Eyre and Spottiswoode. Second Edition. Pp. 324. *Price* £1 17*s.* 6*d.*

It is true to say that the practice of dentistry requires much more than scientific and technical knowledge and ability. The Dental Surgeon must be familiar with innumerable rules and regulations, as well as the professional, moral and ethical codes. It is to be regretted that some schools do not include any instruction on Dental Jurisprudence and practice management, and the student is left to fend for himself when he qualifies.

The publication of the second edition of "The Dentist's Handbook on Law and Ethics" is most welcome, and forms an invaluable addition to the dental literature. The original authors have been joined by E. Eden, Assistant Secretary of the British Dental Association, and a chapter on finance has been contributed by W. Donald, the Accountant of the British Dental Association.

Since the first edition was published in 1953, the Dentist's Act, 1957, has amended the law relating to the practice of dentistry and the control of the profession. This has necessitated the complete revision of the first five chapters. Other important revisions have been made, to bring the book up to date.

The book is divided into three sections dealing respectively with, The Law and Ethics in the conduct of Dental Practice, Forensic Dentistry, and Income Tax and Superannuation, although details of rates of Income Tax seem out of place in this book, as the rates change so frequently. In addition, there are useful appendices containing the Dentist's Act, 1957, the B.D.A. guidance for professional conduct, and copies of National Health Service and other useful information.

The first section on Law and Ethics describes the relationship of the Dentist to the State, to the organised dental services, to the public, and to his colleagues. A very full account is given of the development of the profession to the present day, including the 1957 Act and the National Health Service. The chapters on the Dentist and the Public are particularly valuable. The law relating to negligence and consent to treatment is fully explained, and illustrated by quoting Court cases. A clear distinction is drawn between negligence and inevitable accidents. The importance of accurate and full records of all treatment could have been stressed, as the production of such records is often of great value in refuting charges of negligence.

The section on Forensic Dentistry gives an account of the Courts and Legal procedure in England and Scotland, including notes on the rules of evidence. A comprehensive chapter on the identification by teeth and jaws emphasises the importance of accurate record keeping. Dental evidence has often been used in identifying bodies, and a number of famous criminal cases are quoted where the dental evidence has been of great importance.

The final section on Income Tax and Superannuation explains fully the complicated regulations which many dentists leave to their accountants to interpret.

This is an excellent book which should be read and studied by every dental surgeon and senior dental student.

A.H.R.R.

AIDS TO THE DIAGNOSIS AND TREATMENT OF DISEASES OF CHILDREN.

By ALLEN and CARRE. Baillière, Tindall and Cox. 11th Edition, 1962. Pp 357. *Price* 15*s*.

This book gives a very clear account of the neonatal period and infant feeding and then proceeds to diseases of the systems. The form of the book is, however, totally at variance with its title. A book which is intended as a students aid to diagnosis should contain a full discussion of the major symptoms and signs of paediatric practice with lists of differential diagnoses. Only in certain cases is this possible, *e.g.*, as with vomiting and diarrhœa in infancy, and failure to thrive, otherwise the book consists of brief accounts of a wide range of paediatric diseases. These accounts are clear, accurate and easy to read and there is little doubt that this book is best used in the ward while looking at patients on whom the diagnosis has already been made. However, if you wish to discover the cause of a child's pyrexia for instance then this is quite the wrong book to read. Treatment is dealt with as well as space allows but is often limited to a few lines mentioning all the possible therapies. The exception to this is the obvious care that has been taken over the compiling of suitable diets for sick children. The usefulness of this book could be considerably increased even perhaps to the point of fulfilling the promise of its title by doubling or trebling the size of the index to include major symptoms and signs.

B.G.R.N.

THE ACUTE ABDOMEN IN RHYME.

By ZETA. H. K. Lewis. 5th Edition, 1962.

A slim book of poetry would appeal to many; others would think a pocket book of surgery a necessary acquisition. But what happens when the two are combined as in Zeta's handsome little book ? Does one remember the poetry or the surgery ?

Unfortunately, the poetry is horrible although the author's claims are unpretentious :

" Of course the thing may not appeal to you
A rhyme gives not to surgery its due !
A serious subject needs a solemn style
A lighter method may arouse your bile ! "

Few could digest the whole at one sitting. The occasional, curious and placid browser may be rewarded with useful, accurate facts and an odd couplet which may jangle anew amid the sweat and heat of M.B. finals.

M.A.C.

SPORT

General Review

The weather and frozen, snow-covered grounds has continued to curtail most sport. Rugby matches against Cheltenham and Old Alleynians, hockey matches against Old Beccahamians and Old Creightonians and football matches against The Royal Veterinary College and The Royal Dental Hospital have all been cancelled, together with all Junior teams' matches. The start of the Rugby cup competition has been delayed by a fortnight already and it is unlikely that the Football Club will be able to play their second round match against Charing Cross for some time. Both clubs are attempting to keep their members fit by P.T. sessions and rather difficult excursions through the snow at Honor Oak Park.

Two out-door sports have been limited to a lesser degree. The Cross Country Club has taken part in two matches so far, this year. In the U.H. Clubs' Handicap run in deep snow at Barnet, C. Hone did well to take fourth place and A. Lakin and M. Hutchinson came ninth and eleventh respectively. Hone, Lakin and Bowen Jones combined with three Bart's. runners in a challenge match with The London Hospital, Imperial College and Durham University. Guy's beat The London to take third position, Durham taking first place. Results, just received, of some of last term's matches appear below. On Saturday, 2nd February, the U.H. Cup Competition will be held at High Barnet, where Guy's hope to field a full side.

The Boat Club has also carried on in spite of the conditions. With the Bedford, Reading and Tideway "Head of the River" events commencing at the end of February, two eights have been out training at Chiswick, on Wednesdays and at week-ends. D. Cooper, the Club's captain reports that on occasions ice has formed on the shafts of the oars and crews have returned with frozen socks and track suits.

The Squash and Rifle Clubs have both been successful in recent weeks. The Squash Club replied to a defeat by the Bank of England S.R.C. earlier in the season, by taking the return match by four matches to one. Later, they beat the Jesters S.R.C. by three matches to two.

After three rounds of the U.H. Shooting Competitions, Guy's 'A' team are in third place behind Bart's. 'A' and Westminster 'A'. The 'B' team hold the same position in the Second Division. Recently, Guy's 'A' beat Bart's. 'B' by a margin of three points and Guy's 'B' beat London 'B'.

Next Monday, 28th January, at Manor Place Baths, Walworth, Guy's boxers challenge boxers from London University for the Doris Penny Trophy. The Hospital is the present holders of the trophy and members of the club have been training hard for some weeks to ensure that the cup is retained. The tournament, which starts at 7.30 p.m., includes bouts between boxers from the Lynn and visiting boxing clubs and the Hospital's captain, B. Taylor, hopes that the evening will be well supported.

Enjoying the cold conditions, but in more inspiring surroundings, I. McCormick, a dental student at the Hospital, recently won the British Slalom championship at Val D' Isere. The championship was closely contested, McCormick winning by one second and being only two seconds ahead of the 1961 champion, who was third. McCormick went on to play a prominent part in subsequent events. He took third place in the Lowlander's Slalom, fourth place in the British Grand Slalom and fifth place in the Alpine Ski contest. As a member of the winning British team he took fifth place in the Lowlander's Combined Championship. He was also a member of the London team which took third place in the Infante Alfonso Cup.

Erratum.—The Tankards R.F.C. and the Spirochaetes H.C. play on selected Sundays and not Saturdays as stated in the last issue. The Spirochaetes have been successful in four matches to date, including defeats of the Hartley Country Club, Epsom H.C. and the Old Tauntonians.

I.A.B.

Results and Reports

CROSS COUNTRY

21*st November*, 1962. *At Parliament Hill Fields*

Challenge match v. The Royal Vets., The London, Imperial and University Colleges.
Result—1st Imperial and University Colleges.
2nd Guy's.

28*th November*, 1962.
Division I. University League.
Result– 5th.
Team—
P. Witting, 18th. D. Vernon, 42nd.
V. Holt, 32nd. C. Coffin, 48th.
D. Cooper, 34th. E. Bowen-Jones, 52nd.
League position—5th.

Division II. University League.
Result—19th.
Team—D. Abbott, 43rd.
N. Tilling, 77th.
R. Jones, 102nd.
League position—15th.

8*th December*, 1962.
London University Championships.
E. Bowen-Jones—90th out of

12*th December*, 1962.
Challenge match v. Westminster Bank.
Result —lost.
Team—
P. Phipps, 7th D. Cooper, 9th.
E. Bowen-Jones, 8th. A. Lakin, 10th.

SQUASH

15th January, 1963.
Cumberland Cup Match v. Bank of England S.R.C.
Result—won, 4-1.
Team : D. Richmond, lost 1-3.
P. Sievers, won 3-2.
W. Norman, won 3-0.
C. Chantler, won 3-0.
M. Elliott, won 3-1.

17th January, 1963.
v. Jesters S.R.C.
Result—won, 3-2.
Team : D. Richmond, lost 0-3.
W. Norman, lost 1-3.
C. Chantler, won 3-0.
M. Elliott, won 3-2.
T. Stoker, won 3-1.

SHOOTING

United Hospitals' League.
Division I. Guy's 'A' v. Bart's. 'B'.
Result—won, 477 pts. to 474 pts.
Team : P. Jordan, 96 pts.
R. Ringrose, 95 pts.
R. Jenkins, 94 pts.
D. Wardle, 93 pts.
M. Thomson, 99 pts.

Division II. Guy's 'B' v. London 'B'.
Result—won (London failed to send in their cards.)
Team : D. Leiberman, 91 pts.
A. Kumar, 90 pts.
N. G. Daws, 88 pts.
G. Franklin, 87 pts.
T. Martin, 84 pts.

HOSPITAL INFORMATION

APPOINTMENTS VACANT

GUY'S HOSPITAL, S.E.1

Applications are invited for the post of **Orthopaedic and Casualty Registrar** with duties from 1st March, 1963. Applicants should hold the F.R.C.S. The duties include work in the Orthopaedic Department, Fracture Clinics, Orthopaedic Minor Operations, Children's Burns Unit as well as daily attendance in the Casualty Department with special responsibilities for hand injuries.

Forms of application are obtainable from, and should be lodged with, the Superintendent, Guy's Hospital, S.E.1, not later than **1st February, 1963.**

PASS LIST

UNIVERSITY OF LONDON

Special First Examination for Medical Degrees

December, 1962

Elaine D. Black
R. A. Cramp
E. A. Flower
H. C. Sharp

Third (B.D.S.) Examination in Dental Surgery

November, 1962

Honours

R. Boggia[1]
I. N. Garside[1]
D. E. Gibbons[2]
L. P. Harrison[1]
J. D. R. Nicholas[1,3]
D. A. S. Roberts[3]
A. G. Winchester[3]

[1] *Distinguished in Dental Surgery.*
[2] *Distinguished in Pharmacology and Therapeutics.*
[3] *Distinguished in Orthodontics.*

Pass

P. Bloor
J. L. Bradbeer
G. T. Cheney
C. Clegg
C. H. Forsyth
Mary M. E. Hunter
D. H. Lynn
Frances A. MacGregor
Elizabeth A. Manley
E. G. Mann
J. W. Mellors
Valerie A. Moody
P. J. Phipps
D. H. Richards
J. A. Smith
R. C. Sullivan
A. Tullis

Part I

A. J. Allan
D. J. C. Barnes
Valerie J. Beaton
Priscilla M. Heather
J. M. G. Hunt
A. J. Lakin
J. D. Brammer
R. Brown
C. J. G. Coe
P. D. Davies
Margaret J. Evans
R. S. Falk
A. R. Fisher
B. D. Fitzgerald
Helen M. Gray
D. M. Griggs
Rosalind A. Harvey
S. H. J. Lennane
F. W. Merrifield
R. Morris
Jenifer J. Myers
J. V. B. Robinson
P. W. C. Sherwin
C. D. Stephens
F. M. Titley
C. S. Warden
R. M. G. Watson

Part II

N. A. L. Baker
J. L. Banfill
A. J. Bishop
D. J. Boddy
H. P. Briggs
A. G. Buchanan
G. A. N. Edgar
B. D. Glynn
J. J. Greenwood
D. H. Griffiths
J. D. Gullan-Whur
G. J. Hearn
M. R. G. Holmes
R. M. N. Hooker
R. D. Howell
A. E. P. Hudson
M. C. E. Hutchinson
R. P. Juniper
Sarah A. Larkin
D. R. A. Lloyd-Edwards
D. O. Matthews
Linda M. Meyer
C. W. Obura
Audrey E. Pretty
D. J. Purdell-Lewis
G. C. D. Ross
Jennifer M. Sutcliffe
J. H. Topham
Elizabeth A. Ward
Vera N. Warren
B. E. Williams

GUY'S HOSPITAL DENTAL SCHOOL

PRIZE IN GENERAL SUBJECTS

November, 1962

The following awards have been made:—

1ST AND 2ND PRIZES
divided equally between
M. R. G. Holmes and A. E. P. Hudson

NURSING NEWS

Entered :
Staff Nurse S. Parker to *John and Miriam.*
Staff Nurse D. Potts to *Evelyn.*
Staff Nurse C. Amos to *Evelina Hospital.*

Left :
Sister M. Crowle from *York Clinic.*
Sister C. Gough from *New Cross Unit.*
Staff Nurse B. Butterworth from *York Clinic.*
Staff Nurse C. Older from *Radiotherapy Dept.*
Staff Nurse J. Holdridge from *Theatres.*
Staff Nurse Preskey from *York Clinic.*
Staff Nurse Hubble from *Casualty.*

PAPERS BY GUY'S MEN

In order to make this list as complete as possible, Guy's men whose papers have not been noted in this column are asked to send the Editor details of their publication.

Adams, C. W. M. Histochemical contributions to the problems of atherogenesis. *Middle East med. J.*, 1962, **1**, 113.

Anderson, D. J. Trends in fundamental dental research, *in Modern Trends in Dental Surgery*. Series 1. *Ed.* G. A. Morrant, p. 232.

Bartley, V H. Clinico-pathological conference. *Wisconsin med. J.*, 1962, **61**, 612.

Batchelor, J. R. Memorial Lecture to Dr Peter Alfred Gorer, F R S, *in Tissue Transplantation*. *Ed.* A. P. Christoffanini and G. Hoecker, 1962.

Butterfield, W. J. H., Arab, M. M. H., Buckle, A. L. J., Chlouverakis, C., Hanley, T., Mahler, R. F. and Whichelow, M. J. Mechanism of action of Tolbutamide: Observations on the effects of sulfonylureas on peripheral metabolism in Man. *Diabetes*, 1962, Suppl. to vol. **11**, p. 43.

Calne, R. I. Renal Transplantation *in Modern trends in surgery* Series 1. *Ed.* W. T. Irvine, 1962, p. 137.

Cutler, R. Practice predicaments, mistakes and failures. *Brit. dent. J.*, 1963, **114**, 45.

Killey, H. C. Minor oral surgery *in Modern trends in dental surgery*. Series 1. *Ed.* G. A. Morrant, 1963, p. 166.

Knox, R. and Pickerill, J. K. Cellulose acetate membranes for detecting peroxidase in Mycobacteria. *Nature*, 1963, **197**, 209.

Leggett, L. J. Modern techniques in dental porcelain *in Modern trends in dental surgery*. Series 1. *Ed.* G. A. Morrant, 1963, p. 215.

McLean, J. W. Current developments in anterior filling materials *in Modern trends in dental surgery*. Series 1. *Ed.* G. A. Morrant, 1963, p. 208.

McLean, J. W. Evaluation of elastic impression materials. *Ibid*, p. 223.

Maizels, M. Cation fractions in human red cells. *J. Physiol.*, 1963, **165**, 17P.

Morrant, G. A. Effect of operative procedures on the pulp *in Modern trends in dental surgery*. Series 1. *Ed.* G. A. Morrant, 1963, p. 81.

Morrant, G. A. Progress in dental instrumentation. *Ibid*, p. 61.

Rees, R. J. W. Studies on *Mycobacterium lepraemurium* in tissue culture II. *Brit. J. exp. Path.*, 1962, **43**, 480.

Robinson, B. H. B. and another. Renal discrimination between calcium and strontium. *Bull. Johns Hopk. Hosp.*, 1962, **111**, 20.

Robinson, B. H. B. and others. Adrenal function after prolonged corticosteroid therapy. *Brit. med. J.*, 1962, **i**, 1579.

Wright, E. A. and another. Studies on the fractions of the venom of the sea snake, *Enhydrina schistosa*. *Aust. J. exp. Biol.*, 1962, **40**, 427

PERSONAL

Special rates for Guy's Staff, Students, Nurses, and Subscribers to the Gazette. 5 words 10s. 6d. 15 words 21s. 0d. Box Numbers 1s. extra.

Ordinary rates 15s. 0d. 5 words. Box Number 1s. extra.

FOR SALE

BROMLEY, KENT. Period house, splendid position, accommodation, suitable Dental Practice. Gas Central Heating. Box No. 328. RAVensbourne 4609.

WANTED

DENTAL Vacancies in March for Assistants or Partners with view to early succession in Kent. Box No. 326.

Replies to Box Numbers should be addressed to *Gazette* Office, Guy's Hospital, London, S.E.1.

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T. M. Winstanley, M.B., B.S., The Croft, Bryn Goodman, Ruthin, Denbighshire.

BIRTHS

ANTHONY-DAVIES.—On 30th April, 1962, at the Water Dei Hospital, Bulawayo, to Dierdre (née Cowan, S.R.N.), and John Anthony-Davies, a son (William John), a brother for Elizabeth, Robert, and James.

FIRTH.—On 3rd December, 1962, to Jean (née Kubale), M.B., B.S., D.C.H., and Peter Firth, F.R.C.S., a son (David Stanley John), brother for Fiona.

DEATHS

BERRY.—On 8th December, 1962, at Napier, New Zealand, James Allan Berry, F.R.C.S.

CORFE.—On 10th January, 1963, Ernest William Corfe, L.D.S., R.C.S., aged 84 years.

DIMOCK.—On 9th November, 1962, Edward Claud Dimock, L.D.S., R.C S., of Heath View, Old North Road, Royston, Herts.

DEVERALL.—On 25th December, 1962, Edmund Percy Deverall, L.D.S., R.C.S., of Merebrook, Dormans Park, Surrey.

EDS. {W.G.R. S.M.W.

GUY'S HOSPITAL GAZETTE

A JOURNAL OF MEDICINE, SURGERY, DENTISTRY AND HOSPITAL NEWS

PUBLISHED FORTNIGHTLY

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PASSIM

Stinted Science

Medical research has for long been the Cinderella of scientific and technological development in this country. But in recent months the precarious and half-hearted way in which it is financed has become increasingly obvious. In the days of Van Leeuwenhoek one could make notable discoveries on the proverbial shoe-string, but now with investigations involving such complex tools as the electron-microscope and scintillation counter, a large expenditure may often be necessary before a project can be started.

The majority of research conducted in medical schools is financed by the state via the university, and it is the work of the University Grants Committee to advise the Treasury on university requirements in the light of teaching, research, and developmental necessities. In addition the Medical Research Council, various industries and many voluntary societies finance particular projects as they see fit. And there are the few instances of individual generosity enabling other schemes to be fulfilled, *e.g.*, Mr. Butlin and the Rothschild family recently gave a boost to kidney transplantation and research into schizophrenia respectively. However, in all, the yearly total directed towards medical research is about £20 million.

Although this arrangement is unrealistic from many points of view, it has kept the melting-pots of medical science gently simmering for several years. However, the flaws really began to show when in March last year the Treasury rejected the recommendations of the University Grants Committee concerning how much money was to be spent on the universities during the next five years. This rejection was unprecendented and has implied a severe cut in plans for expansion and development, at a time when the latter is grossly overdue. This blow has hit the medical schools at a critical stage; and has had an even more devastating effect, in view of an unpredicted rise in technicians' salaries which has swallowed most of the paltry increase in awards made to medical schools for development and research.

Today there are several new fields of study which urgently require investigation and financial recognition, *e.g.*, Immunology, Virology, Clinical Genetics, Medical Engineering and Electronics and Molecular

Biology. But trail-blazing costs money, and, because of the lack of it a question was asked recently in Parliament concerning the delay in setting up a Department of Virology at Guy's.

Coupled with this is the dilemma of the frustrated lecturer-researcher, who is paid far less in university employ than he would be working in industry or abroad, and who is anxious to satisfy his burrowing curiosity but who is often unable to do so because of lack of support. Further there is the amazing optimism of the government who assume that the universities will be able to adapt their already overcrowded walls to accommodate an increase in student numbers of 35% within the next five years.

To expect staff, who have worked for many years under the promise of improved finance and facilities, to teach more students at an inflated student staff ratio, with reduced facilities for teaching and research, is almost as impossible a suggestion as the Labours of Hercules. At Sheffield University alone, twenty of the academic staff have recently resigned; three-quarters of them leaving British universities altogether.

To select the right students, teach them well, persuade the right people to take up research, equip and pay them adequately: this is the only way to maintain a modicum of scientific prestige and revive the paralysed state into which university expansion and progress has slipped. If this is to happen then radical action must be taken swiftly. The *Lancet* aptly summarised the situation recently with a brief Mafeking-like phrase: '*Relief is Urgent*'.

For after all, few can rely on a Nobel prize to buy their test-tubes.

Stage Fight

Guy's needs a stage. These words have been said before, but several recent events have stated them louder than the most stentorian voice and more emphatically than the most insistent pen. Five weeks ago, to the accompaniment of rumbling lift-doors, the Christmas Show was staged in the basement concourse of New Guy's House. Last month the perennial apology was made that restricted capacity at the Residents' Play would limit allocation of seats. Then, only last week, the Theatre Club, performing for the first time in the London University Drama Festival, discovered that its custom of acting at the bottom of a well, formed by the Physiology Theatre was wholly unsuited to the requirements of a conventional theatre. The criticism of this event on page 70 witnesses to their discovery.

Some authorities disagree with the view that the extra-curricular student activities are as important a part of the University experience as the academic course. Fortunately, at Guy's this is not the case, and the clubs receive a large measure of interest and support from the staff, and sportsmen are justifiably content with the excellent facilities at Honor Oak Park. But the enthusiasm of less athletic students is wasted trying to overcome the mere mechanical obstacles to the presentation of plays, and concerts. The ingenuity of students who

so successfully erect scaffolding lighting and stages in the most inept surroundings, as well as the money spent on scaffolding would far better be diverted to improving the quality of productions. The Theatre Club at the moment displays a particularly healthy bloom and it is understandable that its members are eager to act on a full-sized, permanent, functioning stage—an experience which most of them remember only from their school days.

May we, therefore, repeat their plea, and that of almost every club which meets "at home", that in the midst of the enlightened planning and building in evidence at Guy's there is in some comparatively noiseless corner an adequate space for a theatre to do justice to the interest and enthusiasm of the largest medical and dental student community in London ?

Initials

It has been said that the most beautiful sound than can fall upon an Englishman's ear is his own Christian name. We intend to exploit this piece of applied psychology for some at least, in the *Gazette*. It has been the custom until now for book reviews and certain other contributions to be concluded with the author's initials only. This, we feel, is unfortunate for several reasons. The partial anonymity of initials means that the identity of the writer is known only to the select few who recognise his abbreviation, and it is preferable that either all should know or none at all. Further, anonymous criticism is of little value, and as book reviews and other items involving personal opinions are intended to be critical, we feel that their protagonists should be prepared and eager to signify an association with them. Thus the names of contributors will be published in full. We propose to draw a slight distinction in that student reviewers will also have their Christian name appended whereas those who are qualified will be distinguished by having initials only before their surname.

However, to the uninitiated the academic status of the reviewer will be more obvious and we trust that no one will be offended if in future the order of the reviews does not correspond exactly with the seniorority of the authors concerned.

The last week has provided a curious mixture of events. The top floor of Hunt's House was magically transformed into a television studio for a recording of 'Your Life in Their Hands'; a fire spluttering economically in the Upper Spit grate was deftly extinguished by three determined firemen, much to the consternation of the shivering customers; the smell of gas once famous outside the Hospital gates has now transferred itself to the Students' Lounge, and the Orthopaedic dressers attending the Fracture clinic looked on expectantly at the 3rd floor acrobatics of the demolition workers on Guy's House.

GUY'S DIARY

FEBRUARY

EXHIBITION *Conjoined Twins.*

11th	M	1.00	Dr. MOYNAHAN. Clinical Lecture. *The History of Medicine. Part I.* *Paleopathology. The Antiquity of Disease.*
12th	T	1.00	Dr. MOYNAHAN. Clinical Lecture. *Prehistoric and Primitive Healing.*
13th	W	1.00	Dr. MOYNAHAN. Clinical Lecture. *The Dawn of Scientific Medicine—Egypt and Greece.*
14th	Th	1.00	Dr. CARNEGIE. Clinical Lecture. *Local Analgesia with Particular Reference to General Practice.*
19th	T	1.00	Dr. MOYNAHAN. Clinical Lecture. *Medicine in Classical Greece, Hippocrates and his School.*
19th	T	1.00	Mr. EMSLIE. Dental Clinical Lecture. *An Ideal Occlusion.*
21st	Th	1.00	Dr. MOYNAHAN. Clinical Lecture. *Hellenistic Medicine : Alexandria.*
21st	Th	5.00	Mr. MURRAY FALCONER. *Two Neurosurgical Cases. All Students Welcome.*
22nd	F	1.00	Mr. BRAIN. Clinical Lecture. *Bronchial Carcinoma, its Present Day Position as Regards Therapy.*
23rd	S	10.00	Clinico-Pathological Meeting. Clinical Theatre. *All Students Invited.*
25th	M	1.00	Dr. STAFFORD CLARK. Clinical Lecture. *Dynamic Psychiatry: Profit and Loss in America.*
26th	T	1.00	Mr. CLARKSON. Clinical Lecture *Tracheostomy in Burnt Children, and Plastic Sponges as a Temporary Skin Cover in Burns.*

ANNUAL DENTAL CLINICAL MEETING, 2nd MARCH, 1963

ABBREVIATED PROGRAMME

MORNING SESSION (10 a.m.—12 noon)

ANATOMY LECTURE THEATRE, MEDICAL SCHOOL

11.45 Lecture :
Current trends in root canal treatment. Mr. A. H. R. ROWE.

THEATRES Nos. 7 and 8 (FIRST FLOOR, NEW GUY'S HOUSE)

Operations commencing at 10 a.m.

There will be DEMONSTRATIONS AND DISPLAYS in all Departments of the School.

AFTERNOON SESSION (2 p.m.—4 p.m.)

SECOND FLOOR, DENTAL DEPARTMENT

2.00 p.m. Clinical cases will be shown by members of the Visiting Dental Staff.

DENTAL LECTURE THEATRE

2.30 p.m. Lecture :
Cases referred by practitioners. Professor M. A. RUSHTON.

There will be DEMONSTRATIONS AND DISPLAYS in all the Departments of the School.

TEA will be served on the First Floor of the Dental Department at 3.30 p.m.

Programmes giving full details will be available at the Clinical Meeting.

Sir Russell Brock has been awarded the Lannelongue Medal of International Surgery by the *Académie de Chirurgie* of Paris. This medal is awarded every five years to a surgeon from any part of the world who, during the previous ten years, has done most to advance the art and science of surgery.

Mr. R. D. Emslie has been appointed Professor of Preventive Dentistry in the University of London in respect of his post as Director of the Department of Preventive Dentistry at Guy's.

NOTICES

ART SOCIETY

The next meeting of the Art Society will be held on 12th February, at 5.30 p.m., in the Dental Theatre, when Mr. L. Lamb will talk on 'Book Illustration'. All are welcome.

STUDENTS' CLUB COUNCIL ELECTION

The attention of all students is drawn to the forthcoming election which will take place on Thursday, 7th March. Last year several places on the Council remained empty because less than one third of certain groups to be represented cast a vote. It is hoped that a better response this year will ensure that all the places are filled.

THE THIRTY CLUB

The 34th Annual Dinner of the THIRTY CLUB will be held on FRIDAY, 24th MAY, 1963, at The Royal Air Force Club. Details will be posted to members later.

J. J. CONYBEARE.
W. D. DOHERTY.

Obiter Dicta

Sir Russell Brock :

'There are certain rules that we must adhere to :—

1. We do not spit on the floor.
2. We do not kick women in the stomach.
3. We get cardiologists to see our patients before we operate on them'

Mr. Blaikley :

'This patient attended my out-patients for several years although I did not see her.'

Mr. Gibberd :

'I don't know where babies come from, do you ?'

NEUROGENIC BLADDER

by Mr. C. H. KINDER

A Clinical Lecture delivered on 17th December, 1962

When there is damage or disease to the nerve supply of the bladder causing a disturbance of the normal act of micturition, this is termed "Neurogenic Bladder". The symptoms may mimic other diseases of the urinary tract and consist of retention, incontinence, urgency and frequency. An understanding of the management of neurogenic bladders is important when treating patients with paraplegia and other neurological disease, because they often die from the urinary complications of this disease. Even today with highly efficient paraplegic centres, 64% of patients with traumatic paraplegia die from the complications of neurogenic bladder.

An understanding of the problems involved requires some knowledge of the physiology of micturition, the whole subject often being poorly covered in surgical and medical textbooks.

Physiology of Micturition

The ideas on the physiology of micturition have changed over recent years, partly because of the increased understanding of the disorders of micturition as seen in paraplegics. Briefly the modern views can be summarised as follows :—

Distension of the bladder gives rise to afferent impulses travelling in the parasympathetic nerves to the second, third and fourth sacral segments of the spinal cord. The reflex arc is completed by motor impulses passing through the same nerves (the nervi erigentes) to the detrusor muscle. The bladder contracts down onto the bladder neck and at the same time the urethra is pulled open by the arrangement of the longitudinal muscle fibres of the detrusor. Resistance is reduced because the urethra is shortened and widened by active contraction of the detrusor muscle. It has been known for years that the urethra relaxes before micturition and it has been thought that this was an active reflex relaxation; (Barrington 1931). Lapides (1958) has experimental evidence to show that this is a passive action and that the urethra is merely obeying physical laws. If any elastic tube is shortened and widened the pressure within it will be reduced. He has imitated this action by fashioning "urethras" out of tubes of bladder muscle opening onto the abdominal wall. These were continent when the bladder was not contracting because the tubes were long enough.

In an individual with an intact nervous system, inhibition of the motor impulses to the bladder is brought about by higher centres below the level of consciousness, through the cortico-regulatory fibres. Continence results and the bladder is allowed to fill. When intravesical pressure rises, sensory impulses reach consciousness, the detrusor contracts and voiding occurs at will. Although relaxation of

the voluntary muscles of the perineum takes place before micturition occurs, continence is thought to be possible even if these are paralysed.

Causes of Neurogenic Bladder

1) *Injuries to the spinal cord and corda equina.*
2) *Disseminated sclerosis and other diseases of the spinal cord.*
3) *Congenital hydrocephalus and spina bifida.*
4) *Spinal tumours.*
5) *Tabes, syringomyelia and diabetes.*
6) *Damage to the nervi erigentes by surgical trauma.*

Effects of Neurogenic Bladder

The main effects of paralysis of the bladder are :—

1) *incontinence.*
2) *infection.*
3) *calculi.*
4) *renal failure.*

Incontinence may be due to an uninhibited bladder which contracts frequently and forcibly and overcomes urethral resistance. These patients will often suffer frequency and urgency before incontinence supervenes. In other patients with chronic retention, overflow incontinence ensues. This happens at night at first, and later by day.

Infection of the urine results from stagnation in the bladder, ureteric reflux and the presence of stones in the bladder or kidneys. It may present as pyelonephritis, pyonephrosis, cystitis, prostatitis or epididymitis.

Stones in the calyces or bladder occur as a result of infection with urea-splitting organisms such as B. proteus, and also because of stasis in the kidneys and bladder. Triple phosphate (Calcium ammonium magnesium phosphate) stones appear in infected urine; pure calcium phosphatic stones in sterile urine.

Renal failure is the common cause of death and is the consequence of parenchymal destruction from pyelonephritis, ureteric reflux, stasis and stones.

Functional Types of Neurogenic Bladder

Clearly the form that the disturbance of bladder function takes, depends on the anatomical site of nerve disruption.

1) *Uninhibited Bladder*

An uninhibited bladder follows damage to the cortico-regulatory fibres running from the motor cortex to the micturition centre in the spinal cord. The bladder empties frequently and urgently, often with incontinence, although all sensation is normal. This abnormality of function occurs with cerebral vascular accidents, hydrocephalus and

in congenital enuresis. It is the usual complication of disseminated sclerosis and may complicate spina bifida.

2) *Automatic Bladder*

Complete disruption of all ascending and descending impulses in the spinal cord above the sacral centre will lead to an entirely reflex bladder, uninhibited by any cortical control or conscious sensation. The bladder is small, tonic and trabeculated. It empties often, yet incompletely, because of disco-ordination of the detrusor and spasm of the perineal muscles. Ureteric reflux is common. It is similar to an upper motor neurone lesion affecting somatic muscle and indeed may complicate such a lesion.

It occurs in fracture dislocations of the spine at or above the thoraco-lumbar junction, in spinal cord tumours and transverse myelitis.

3) *Autonomous Bladder*

An autonomous bladder follows disruption of the reflex arc. This may occur in the sacral segment of the cord following fracture dislocations below the thoraco-lumbar junction, in spinal cord tumours, Potts paraplegia and spina bifida. It may result from damage to the nervi erigentes following such operations as abdomino-perineal resection, and Wertheim's hysterectomy. The bladder is large and toneless. No reflex micturition can take place. Emptying only occurs from increased intra-abdominal pressure by contracting the diaphragmatic and abdominal muscles. The bladder is without sensation of fullness or pain.

4) *Tabetic Bladder*

If sensation of fullness is lost as a result of damage to the posterior columns, the reflex arc is again broken and micturition disturbed. The bladder tends to become very large and without tone—incontinence from overflow is common. Both temperature sensation and the motor fibres to the detrusor are intact. This type of disturbance may occur in syringomyelia, disseminated sclerosis and diabetes, as well as tabes.

Assessment of Neurogenic Bladder

A careful assessment of the neurological lesion by a neurologist is helpful as it is important to know the level of the anatomical lesion. In traumatic paraplegia, in particular, a prognosis as to the degree of recovery may be given with some accuracy at an early stage, so guiding management. For example, in complete paraplegia and neurogenic bladder, the presence of anal and bulbo-cavernosus reflexes implies that the reflex arc is intact and that voluntary micturition is unlikely to develop.

1) *Radiography*

Intravenous urography will show dilatation of the upper urinary tract, stones and the residual urine. A cystogram, or better, a micturating cystogram will reveal ureteric reflux and the level of outlet

obstruction, if the bladder empties poorly. This may be at the bladder neck or at the level of the external urethral sphincter. An attempt at a micturating cystogram may be combined with a retrograde urethrogram with a viscous radio-opaque medium so delineating the whole of the urethra more accurately.

2) *Cystometry*

Measurement of the intravesical pressure in relation to increasing bladder volume will give further evidence of the functional type of bladder dysfunction, and also objective evidence of recovery. It is performed by passing a catheter into the bladder and attaching a manometer. In doing this investigation, other helpful facts emerge. The volume of residual urine, the sensation of the bladder to temperature and distension, the presence of vesical contractions and the patient's ability to micturate can all be measured. The pressure that a patient can produce by straining is of practical importance when assessing an autonomous bladder. A violent bladder contraction induced by a few ounces of ice cold water implies the return of reflex function to the bladder in an automatic bladder.

3) *Cystoscopy and Urethroscopy*

Cystoscopic examination of the bladder and urethra will help to confirm the general picture and show the particular form of neurogenic bladder. For instance the small and grossly trabeculated spastic bladder associated with a narrow external urethral sphincter seen in a patient with an upper motor neurone type of lesion.

Other methods of investigation are still experimental tools such as electromyography and the use of flowmeters in the urethra.

In considering the main groups of patients with neurogenic bladders, it is helpful to inquire into the various aspects of traumatic paraplegia in some detail, and to use this knowledge when considering the management of the other forms of bladder disfunction.

Traumatic Paraplegia

Following injury to the spinal cord, various stages can be made out. Firstly, that of spinal shock, when the bladder, like the somatic muscles, is toneless and without sensation. It fills and overflows. This stage may last for some weeks depending on the effectiveness of management. It passes into a stage of recovery, which may continue for years depending on the degree of recovery from concussion or contusion, and in the case of nerves, regeneration. A static stage then follows where there may be some voluntary control in incomplete lesions or an automatic or autonomous type of bladder in complete lesions. If the patient becomes debilitated, reflex activity tends to deteriorate, the bladder again becoming toneless.

The aims of management are to restore effective micturition with continence and to prevent complications of infection, stones or renal failure. These aims are seldom achieved completely, but by controlling residual urine in the bladder and stagnation in the kidney, stones and infection are less likely. If continence is not possible, dryness can be achieved by various means.

During the stage of spinal shock before any reflex activity has returned, the bladder is drained by an indwelling, soft plastic or rubber catheter connected to a continuous closed drainage apparatus. The catheter is passed with theatre discipline and changed weekly. Any other form of bladder drainage leads to ascending infection. A suprapubic drain is not necessary, and tidal drainage too complicated to be practicable. During this period diuresis is maintained, the urine acidified and antibiotics used only when needed. The patient is turned two hourly to prevent bedsores and urinary stasis.

During the stage of recovery bladder training is instituted. The catheter is clamped, never spigotted, and the bladder allowed to fill. This may give rise to vague and bizarre sensations, which the patient can recognise as signals that bladder fullness has occurred. Each week after a catheter has been removed, the patient is given the opportunity to attempt to void. By straining, lifting himself out of wheelchair or stimulating the skin of the thigh or genitalia, emptying will, sooner or later, occur. If by these means, residual urine is reduced to less than 20% of capacity, this may be regarded as satisfactory.

If emptying is incomplete or ineffective, the cause must be found and if possible removed. Thus in a patient with an upper motor neurone type of lesion, poor bladder contraction may be made worse by spasm of the external urethral sphincter and other perineal muscles. There is loss of balance between the detrusor and urethral resistance. Detrusor efficiency cannot, in itself, be increased but urethral resistance can be reduced, by widening the bladder neck with a periurethral operation, by decreasing external sphincter spasm by dividing the external urethral sphincter or by dividing the external pudental nerve. Sometimes all three of these procedures may be needed before emptying is satisfactory.

If ureteric reflux is marked this, too, will lead to residual urine and may have to be treated either by re-implanting the ureter in the bladder through a long oblique tunnel, or by permanently draining the bladder through a urethral catheter.

If the bladder is very small and spastic, adequate micturition is impossible because of incontinence, residual urine and reflux. If such a patient has complete permanent paraplegia, it is worth while injecting intrathecal phenol or alcohol thus damaging the sacral nerves and abolishing the reflex arc. This, in effect, converts the automatic to an autonomous bladder. The latter is often easier to manage, can be compressed and emptying helped by bladder neck resection, if necessary.

Continence is achieved in various ways. Men who have incomplete lesions and urgency leading to incontinence, can be helped by wearing a penile clamp for short periods. Although some patients achieve excellent reflex micturition, very few are prepared to live without some form of incontinence apparatus. Straining and compression will achieve continence in some patients with autonomous bladders; while others will need a permanent indwelling urethral Foley catheter, because of incontinence due to residual urine which cannot be abolished by other methods. In general, males with incontinence, but with no residual urine, are best managed with an apparatus

but this is not possible in females. Incontinence in women can only be treated by a permanent urethral Foley catheter or by some diversion operation on the ureters.

To summarize patients with neurogenic bladders needs continuous surveillance with regular follow-up. It is essential to see that efficient emptying of the bladder occurs either with or without continence. If this is not possible urinary diversion has to be performed. Only in this way are the complications of infection, stones and renal failure avoided.

Disseminated Sclerosis

The management of neurogenic bladder other than from traumatic paraplegia is similar, but there are special problems which need discussion.

Patients with disseminated sclerosis have frequency, urgency, incontinence and retention. As they are usually women, no incontinence apparatus can be fitted satisfactorily, and because the bladder is usually small and spastic it often will not tolerate a permanent indwelling Foley catheter.

Treatment depends on the stage of the disease. If a patient is active, with little somatic disability, the bladder capacity may be increased by a colo-or ileocystoplasty. This is likely to abolish incontinence, as well as frequency and urgency. A less severe procedure consists of making a vesicostomy; that is a tube of bladder fashioned and sutured onto the abdominal wall, the bladder neck having been closed. Urine is then collected in an apparatus stuck onto the skin. This operation is as effective as diverting the urine into an ileal conduit, conserves the uretero-vesical valvular mechanisms and is far less hazardous. It may not always be possible, however, to close the bladder neck.

If retention is a problem, especially in a male, a resection of the bladder neck or external sphincter, with or without pudendal neurectomy may be necessary. If the disease is advanced, intrathecal alcohol injections give great relief from painful flexor spasms of the legs, and in addition reduce the spasticity of the bladder and perhaps make permanent catheterization possible.

Spina Bifida

The type of neurogenic bladder seen in spina bifida depends on the relation of the lesion to the sacral segment of the cord. Sometimes the micturition centre is dissociated from the brain and a reflex automatic type of bladder ensues. The babies have a spastic, trabeculated bladder, ureteric reflux and often obstruction at the bladder neck or external urethral sphincter. The children, therefore, are incontinent with retention. More commonly, however, the lesion involves the sacral part of the spinal cord leaving the bladder toneless and without sensation. Again incontinence with retention results.

As in other forms of neurogenic bladder, management aims at abolishing residual urine. If the urethra is narrow a Y-V plasty of the bladder neck with or without pudendal neurectomy is indicated. In hypotonic bladders, manual compression and straining may be

enough to empty the bladder. However, where incontinence is the problem, and this is especially so in little girls, an ileal conduit operation may produce dramatic changes in the well-being of the child. She often has gross congenital abnormalities of the feet and legs together with pressure sores. The latter cannot be managed properly until the child is dry.

Ureteric reflux with consequent hydronephrosis, infection, stone formation and renal failure may require re-implanting the ureters into the bladder through long oblique tunnels and often this has to be combined with plastic operations on the bladder neck to reduce residual urine. In other cases, if upper tract dilatation is increasing, this in itself may require urinary diversion, if re-implantation of the ureters is not satisfactory.

Tabetic Bladder

In tabes the bladder is large and toneless, sensation of fullness is absent and retention with overflow common. It may require operations to reduce urethral resistance, such as prostatectomy or bladder neck resection, especially if there is any degree of organic obstruction. At the same time removing the upper part of the bladder will reduce the size of the bladder and, therefore, may help emptying, although this will not increase the tone of the remaining part of the bladder. The most important part of management of these cases is to insist that the patient empties the bladder at regular intervals, and never lets it get over-distended. Some men find they can do this more effectively sitting than standing, perhaps because they can produce a bigger intra-abdominal pressure in this way.

Damage to the Nervi Erigentes

Following radical operations in the pelvis for cancer, some patients have retention with little or no sensation of bladder fullness. Investigations are carried out to exclude organic obstruction, such as prostatic hypertrophy. Cystometry may be helpful. Some of these patients recover normal bladder function after a period of continuous catheter drainage, others have permanent destruction of the nerves and require drainage either through a permanent suprapubic cystotomy or indwelling urethral catheter draining into a bag. It is sometimes possible to so reduce urethral resistance by widening the urethra, that the bladder is emptied satisfactorily by straining. Thus the infection from a permanent catheter is avoided, urine being collected into an incontinence apparatus.

From this sketchy review of neurogenic bladders, it can be appreciated that the attitude to their management has radically changed during the last forty years or so. Patients with traumatic and other forms of paraplegia are best treated from the outset in special centres where all the complex problems involving neurology and neurosurgery, plastic and orthopaedic surgery, and urology can be studied and treated together.

Some patients with slowly progressive neurological lesions giving rise to disturbance of micturition can be made more comfortable by treatment and sometimes by major surgery, whether they return to work or to a Cheshire Home.

RESPIRATORY DISTRESS SYNDROME IN THE NEWBORN

by B. STOREY

The Respiratory distress syndrome (R.D.S.) or Hyaline membrane disease is one of the major problems in Neonatal Paediatrics. It is a condition of respiratory distress developing in the first hours of life and causes more than half of the premature infant deaths in the first three days of life.

Aetiology

This is unknown but it occurs primarily in premature infants and is also seen in children born of diabetic mothers and following delivery by Caesarean section.

Pathology

Macroscopically the lungs are a deep purple red colour, congested, firm and incompletely aerated. Microscopically there is resorption atelectasis, pulmonary oedema and intra-alveolar haemorrhage. The alveolar ducts are lined by a membrane which consists of fibrillary eosinophilic material. Barter and Maddison have, however, reported a series where the majority of cases contained a basophilic material.

The structure of the membrane, when studied by electron microscopy, is irregular with a granular or reticular matrix, which surrounds altered cellular debris; cells in the process of necrosis, nuclear and cytoplasmic debris, mitochondria and vacuoles.

Pneumonia and intestitial haemorrhage are inconstant findings. There are usually general signs of anoxia, *e.g.*, subpleural, sub-epicardial, sub-arachnoid, intraventricular, intra-mesenteric haemorrhages and congestion of many viscera.

Pathogenesis

This is not understood. Hachheim in 1903 observed membranous structures in the lungs of babies who had aspirated vernix caseosa and from this stemmed the theory of an aspiration phenomenon. Recent workers in this field appear to favour an origin within the lung. T. Wade-Evans (1962) postulates that anoxia alters the pulmonary capillary permeability temporarily and fibrin-containing oedema fluid forms the hyaline membrane. Severe anoxia results from reduction in direct aeration and because of an alteration in the pulmonary circulation the anoxic crisis causes a rise in pulmonary blood pressure and a fall in the aorta so allowing a shunt reversal from right to left via the ductus thus depriving the lung of its share of available oxygen.

Clement Smith (1960) detected circulatory disturbances in infants with this lesion while Pattle, *et. al.*, 1962, demonstrated the inability of the lungs of certain infants with R.D.S. to form a normal lining film and they regard this failure to form a lining film as the immediate cause of the collapsed state of the lungs and this accounts for the main physical and histological features.

The Clinical Picture

This is one of the newborn with an increased respiratory rate, expiratory grunt, laboured respirations, recession of the sternum and ribs and episodes of cyanosis and apnoea. For the first few hours of life the infant may appear normal but the signs of distress are usually evident within 12 hours of birth. The clinical picture varies considerably from severe respiratory distress to prolonged periods of apnoea, although as stated, the child appears normal for the first few hours of life. In fact, on careful observation respiratory symptoms are nearly always present from birth. On auscultation there may be decreased air entering and crepitations. The incidence is highest amongst the smaller infants, being closely related to prematurity.

Investigations

Those which are of value in confirming the diagnosis and managing the condition are :—

Chest X-ray, where there is a characteristic diffuse reticulogranular infiltrate and an air bronchogram.

Certain biochemical changes are found. There is a fall in the blood pH., increase in pCO_2.

Electrocardiographic changes are present but variously interpreted. Keith, *et. al.*, have suggested that a tall R wave over the right praecordium, indicative of high pulmonary vascular resistance is associated with a better prognosis than the deep S wave over the right praecordium, indicative of a low pulmonary vascular resistance.

The fate of these infants is either death from fatigue of the respiratory muscles, development of pneumonia or a complete recovery. Cooke in 1960 reported a series where premature infants with a total serum protein of less than 5G% did worse than those with a higher value.

Management

(i) The standard procedure of oxygen, high humidity and antibiotics is usually ineffective though most units will have a "survival" attributed to this therapy.

(ii) Aerosolized proteolytic fibrinolytic enzymes have been used in an attempt to dissolve membranes but overall have been of little benefit.

(iii) Hutchinson, *et. al.*, 1962, give an encouraging report of 27 cases where 16 survived after vigorous metabolic control was instituted using sodium bicarbonate and glucose according to blood pH. The daily fluid intake was controlled at 65 ml per Kg body weight.

(iv) Warley and Gairdner lay particular emphasis on the work imposed on the respiratory muscles and feel that any mechanical means of lightening this load would be of value and they do this by passing a suture behind the xiphisternum and taking the suture vertically through a hole in the incubator and attaching it to a counter weight—traction is adjusted to give optimum relief to breathing; 5% of the infant's weight is usually adequate.

Prophylaxis is the aim of the paediatrician and avoidance of unnecessary Caesarean section, prevention of prematurity and careful management of the diabetic mother are recognised means of reducing

the incidence of this entity. Bonham Carter, *et. al.*, 1956, found evidence that a raised venous pressure was beneficial to these infants in the first hours of life and to hold the baby above the placenta could lead to a substantial loss of blood through patent umbilical arteries so lowering the venous pressure. Bound, *et. al.*, 1962, suggest that the R.D.S. might be prevented by delaying ligation of the cord and using gravity in assisting the transfer of blood to the baby as routine procedure at all premature deliveries.

As the only definite diagnosis is a histological one, recovery in cases of respiratory distress in the newborn does not necessarily mean that these infants have in fact, suffered from Hyaline membrane disease.

References

BARTER, R. A. and MADDISON, T. G. (1960). *Arch. Dis. Childh.*, **35**, 460.
BONHAM CARTER, R. E., BOUND, J. P. and SMELLIE, J. M. (1960). *Lancet*, ii, 1320.
BOUND, J. P., HARVEY, P. W. and BAGSHAW, H. B. (1962). *Lancet*, i, 1200.
DOMVILLE COOKE, W. D. (1960). *Med. J. Aust.*, i, 887.
HUTCHINSON, J. H., KERR, M., MCPHAIL, F., DOUGLAS, T. A., SMITH, G., NORMAN, J. N. and BATES, E. H. (1962). *Lancet*, ii, 465.
PATTLE, R. E., CLAIREAUX, A. E., DAVIES, P. and CAMERON, A. H. (1962). *Lancet*, ii, 469.
SMITH, C. A. (1960). *J. Paediat.*, **56**, 605.
SPECTOR, R. G. (1962). *Guy's Hosp. Gaz*, **76**, 359.
WADE-EVANS, T. (1962). *Arch. Dis. Childh.*, **37**, 470.
WARLEY, M. A. and GAIRDNER, D. (1962). *Arch. Dis. Childh.*, **37**, 455.

THE PUPILS' PHYSICAL SOCIETY

The Pupils' Physical Society held its first meeting of 1963, on Thursday, 24th January, in the preclinical classroom, and we were privileged to welcome along some twenty students from St. Thomas's Hospital. The meeting was held in two parts—before dinner there were eleven patients with interesting physical signs to examine who Messrs. Tunstall-Pedoe and Warren had managed to glean from the wards, and at 8 p.m. there was a Twenty Questions session.

Among the interesting cases shown was an old Queen's Square favourite of Cylindroma—also known as Turban Tumour in which there are multiple adenomata of the sweat glands of the scalp. A case of ankylosing spondylitis with aortic incompetence, uveitis and pustular psoariasis taxed many people's diagnostic powers; further cases included sclerodema, neurofibromatosis and silicosis. An excellent demonstration was given by Dr. Abrams of the Department of Experimental Medicine of methods used for the investigation and treatment of patients with peripheral vascular disease.

The meeting was resumed in the Quiet Games Room and free beer was provided for all those needing refreshment. A short discussion was held on the clinical findings of the cases seen before dinner and then another round in the "Battle of the Borough Hospitals" commenced. Five students from St. Thomas's were given a brief clinical history of a case and then allowed to ask questions about the results of physical signs, investigations and treatment, with the object of reaching a diagnosis in as few questions as possible. The case which they correctly diagnosed in eleven questions was one of Rheumatoid Arthritis in which secondary amyloidosis occurred, terminating in renal failure. The Guy's team were presented with a rather confusing history of an 18 year old market gardener who had an appendicular abscess in his left iliac fossa and subsequently developed scurvy, this case completely baffled the "brains", and they were even more baffled when told the diagnosis. Finally, a case of acute lymphatic leukaemia with deposits in the pituitary was presented to the audience and Mr. John Davies was awarded a book token for the first correct diagnosis.

Tony Russell and Hugh Tunstall-Pedoe must be congratulated for making this meeting yet another of the interesting, informative and enjoyable occasions now to be expected from the Physical Society.

CHRISTOPHER J. PADFIELD.

CRITICISM

Guy's Hospital Theatre Club at London University Festival of Drama

"Tricolor Suite" by Peter S. Preston
Produced by Malcolm Burke

Compiled from the adjudication and comments of
WILLIAM KENDAL

The Play that Guy's chose was a wittily written satire on French politics and even more on the French word for love, and one of the difficulties of the play is that the author asks for a stage so filled with furniture that it is very difficult for any production to get going. Particularly in a play of this kind one wants a deal of quick and rather bravura acting where the chief character, Garnier (played by Iain Reid) has to make love to the wives of three different ministers and the wives have to fall in love each in their own specific way. Also, had there been a much clearer stage there would have been much greater fun for everybody.

The function of a festival like this is to provide the actors with experience in playing to an audience which does not consist of their friends. A festival audience is a critical audience: they are not only not your friends, they are making comparisons. It was, therefore, something of a pity that Guy's did not take a play less dependent on furniture and giving more opportunities for acting. To take a play with a large cast was good. I would be inclined, however, for students to take as imaginative a play as possible. They are, after all, in an institute of learning and therefore have an opportunity for self-expression which is quite special. On the other hand, by virtue of age, they have not the experience of technique, and therefore one would have thought a more satisfactory choice would have been one which requires a deal of imagination rather than a deal of technique.

It is also important to draw on the services of the most experienced producer they can find so that they can take advantage of the opportunities of the festival. I thought that the Guy's production was competent but required more initiative and imagination. Almost all plays worth the doing have different points to emphasise (although clearly there is a limit to that: you can kill a play by imposing on it an entirely alien interpretation, as Guthrie has done with The Alchemist), but Guy's could well have concentrated more on the love-making and less on the politics, by increasing the speed of playing at the beginning. The whole thing needed to be slightly fantasticated, especially as regards the cramped set and women's costumes.

But the real challenge of the play is that it takes great skill on the part of Garnier to create a real-life situation on the stage and then step outside to comment on it in his private joke with the audience. Iain Reid's was a good interpretation with good gestures but he seemed unable to vary his vocal melody to differentiate between his addresses to the audience and the scenes with his mistresses. And I never really believed he was making love to those women. Of the other actors, the men were better than the women. The ministers appeared

rather young and the women, who are given little help in the text, would have benefited from more rehearsal and more flourish in both dress and entrances.

Malcolm Burke and Iain Reid.

The standard of the festival as a whole was on the brink of being very good, and a degree more skilled and imaginative production would have moved it substantially higher. All plays were well prepared and only one or two prompts were needed. I wondered, however, whether many of the plays had been rehearsed in cramped conditions because there was an apparent unfamiliarity with the scale of the U.L.U. theatre and a tendency for actors to play to the audience rather than playing into themselves.

As for the Guy's play, it made its point, it was funny, and was enjoyed.

Next week, the London University Revue 'Advance to Go' appears at Malet Street (13th-16th February), and our next Criticism will be chosen from this and the London Medical Orchestra concert announced in the last issue.

CORRESPONDENCE

Letters to the Editor of the Gazette

Guy's Hospital Theatre Club

SIR,—It has become apparent that many of your readers were disappointed at missing one production of last term. Lest they may have forgotten, fog was then the cause. Today ice and snow are somewhat inhibiting factors. Yet this term the Theatre Club are staging a play controversial enough to enable audiences to forget natural vicissitudes.

This play is "Look Back in Anger" by John Osborne, which was responsible for the '*nouvelle vague*' in the English Theatre. Production is in the hands of Richard Sudworth, who assisted with Five Finger Exercise and acted in The Ascent of F6, assisted by Valerie Beaton who acted in I am a Camera. The cast includes Tim Davis, who appeared in Gethsel and Five Finger Exercise, Sue Franklin in The Ascent of F6, and Mathew Lewis in Romanoff and Juliet.

The play is to be staged in the Physiology Theatre from Monday, 25th February to Friday 1st March, at 7.30 (excepting Wednesday at 6.30). There will be no charge for tickets, but a collection will be made in the interval. Applications should be made to the House Manager, c/o Guy's Hospital or personally from outside W. H. Smith's bookshop on weekdays between 1.00 and 2.00 p.m., from 12th February onwards. We hope that your readers will not be intimidated by the weather conditions this time.

Yours etc.,

ERIC TILLER,

Guy's Hospital, S.E.1. *Hon. Sec. Guy's Hospital Theatre Club.*

Modern Pentathlon

SIR,—A Modern Pentathlon Club has been provisionally formed in the Hospital; the Pentathlon being a sport which consists of cross-country running, épée fencing, horse-riding, 0.22 pistol shooting and free-style swimming. Points are awarded to each competitor according to his individual performances and the team result depends upon all the totals of the individual scores.

One-day matches, including home matches, are arranged for every three or four weeks and they may be either triathlons with running, fencing and swimming, or tetrathlons with shooting added. Full Pentathlon competitions are arranged for at least four times a year, the riding event being the most difficult to arrange. The fixture list includes matches against Oxford and Cambridge Universities.

Because of the varied nature of the events it is a sport which is interesting and may be quickly learned up to standard by the average athlete. If there is anybody who would like to try and take up the Pentathlon, especially in the Pre-Clinical years, and would like more information, would he please contact Richard Thacker, c/o The College.

Yours etc.,

B. D. O. SMITH.

Guy's Hospital, S.E.1.

NOTICE

GUY'S HOSPITAL LADIES' ASSOCIATION

A Jumble Sale will be held in the Nurses' Home on Friday, 1st March at 1.30 p.m. If you have any articles suitable for disposal on this occasion, would would you kindly send them to The Secretary, Guy's Hospital Ladies' Association, Guy's Hospital, S.E.1, or leave them personally at 24, St. Thomas's Street, between 11 a.m. and 4 p.m. on Tuesdays and Thursdays.

REVIEWS

A DOCTOR'S GUIDE TO COURT.

By KEITH SIMPSON. Butterworth. 1962. *Price* 30*s*.

Professor Simpson's new book provides a layman's guide to the courts of the land with reference to the special problem which will concern the medical profession. Emphasis is laid throughout that much avoidable embarrassment is suffered by doctors in court due to lack of familiarity with environment, procedure and the wiles of the legal profession. This book should do much to forearm the uninitiated with its help in the preparation and presentation of medical evidence and its practical hints on behaviour in the witness box.

There are chapters devoted to the special problems of drunkeness, assault, cases of abortion, etc., and, although some of the material will be of no interest to the budding forensic pathologist, it is essentially designed for those in other fields. Relatively short and well illustrated with cases throughout, it is a valuable book; for there are few of us who will not be required to give service in the courts.

T. A. M. STOKER

HUTCHISON'S CLINICAL METHODS.

By DONALD HUNTER and R. R. BOMFORD. Cassell. *Price* 21*s*.

This little book, the major part of which was written by Robert Hutchison at the age of 25, was first published in 1897. The fact that it has survived 66 years and fourteen editions, and still enjoys a considerable sale, is comment enough.

The present edition has been brought up to date without sacrificing the fundamental character of the book, which was intended as a practical guide to the clinical investigation of patients. This aspect of medicine is all too easily lost in the complexities of the present crowded syllabus, and this book highlights the essentials of clinical method to good advantage.

By its very nature, I suppose it is inevitable that such a book should include a brief glance at such subjects as electrocardiography, the clinical aspect of which was quite adequately covered for the initiate. By trying to explain the theory of the E.C.G., however, I feel the authors of this section attempted too much for such a small allocation of space, and only helped to confuse.

Otherwise, especially where actual examination of the patient is concerned, there is an abundance of lucid detail.

In conclusion, while essentially designed for the newcomer to the bedside, for whom it is a standard work, this easily handled textbook will not be out of place on the bookshelves of the postgraduate.

BRIAN TAYLOR.

DENTAL PROSTHETICS—COMPLETE DENTURES.

By NAGLE AND SEARS. Henry Kimpton. *Price* 88*s*.

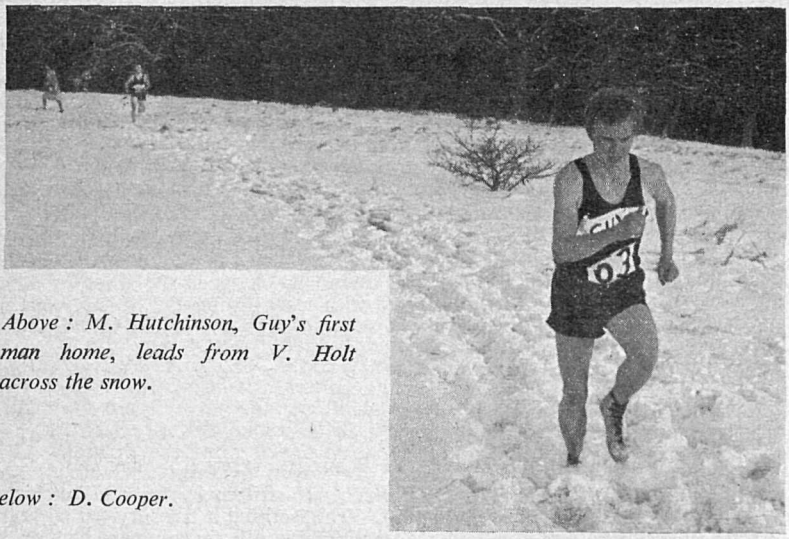
This is the second edition of a high standard American textbook. It completely covers the subject of full Denture Prosthetics from technical to clinical work, in every possible detail. Two new chapters on the arrangement of anatomical and non-anatomical teeth are included and prove to be informative and useful.

There are over three hundred pictures and diagrams in the book, some of which are confusing and some of which could be omitted without serious loss to the reader.

The subject matter is very detailed, but not always clear; the interest of the reader more than occasionally being lost. The book is very well produced, but offers no more than would simpler, less expensive textbooks on the same subject.

J. D. JAMES

SPORT



Above : M. Hutchinson, Guy's first man home, leads from V. Holt across the snow.

Below : D. Cooper.

CROSS COUNTRY

The United Hospitals' Cross Country Championships were run over a five mile course at Hadley Wood, Barnet, on Saturday, 2nd February. The cold conditions and the varying depths of snow over the course interfered with the predicted performances of many of the runners and called for an extra degree of stamina. Bart's. won the team race with Guy's placed third. Individually the race was won by a Bart's. runner in a time of 31 mins. 50 secs. The first Guy's runner home was M. Hutchinson in 13th position with a time of 36 mins. 12 secs. He was closely followed eight seconds later by V. Holt in 14th place. D. Cooper, again only a few seconds later was placed 17th with a time of 36 mins. 52 secs. Further back in the field, well bunched, came E. Bowen-Jones (23rd), P. Witting (24th), N. Tilling (28th), A. Davies (29th), and A. Lakin (30th). Finally, but not last in the field of forty-nine competitors came R. Jones (34th) and D. Silk (40th).

BOXING

On the evening of Monday, 28th January, at Manor Place Baths, Walworth, the Lynn Athletic Club promoted a boxing tournament, which included, in the words of the programme. "the annual student dust-up between Guy's Hospital and London University". The "dust-up", more accurately, is a challenge match between boxers of the Hospital and University for the Doris Penny Trophy, which for the past four years Guy's have held. This fifth meeting ended the Hospital's run of success abruptly. A strong University team out-boxed in all seven bouts.

The first two contests of the match produced a lot of excitement but little by way of good boxing. Both J. Maghband-Zadeh and R. Robinson tore into their opponents with an whole battery of punches, which have little relation to their targets and little consideration in their timing. Zadeh, at the crowd's encouragement, verily leapt at his man hitting the air all about him, while considering the canvas at his feet. His opponent, at first mesmerized by the flurry of arms and gloves, remained unhurt and in the second and final rounds scored with sound counterblows. Robinson similarly disturbed his opponent. With a variety of pushes, slaps and jabs he chased his challenger around the ring, but scored on few occasions. In reply, his opponent got through sufficient scoring blows and, although bloody and tired, won on points.

The third bout produced an interesting clash of styles. B. Hartley (*Guy's*) faced a clever University boxer with a longer reach and a good defence. Hartley, short and compact, tried to come to close quarters but was constantly driven back by long lefts from his opponent. Weber for the University continued to score from a distance and, although in the third and final round his guard dropped and Hartley got home several crisp blows to the body, the match was won on points.

With three of the seven contests lost, Guy's hopes rested on their captain, B. Taylor, in the fourth bout. Again facing an opponent with a longer reach, Taylor attempted to get through this guard with left jabs to the head accompanied by quick footwork. His opponent retaliated well, however, and towards the end of the first round Taylor was put down. In the second round, Taylor forced his opponent into several clinches. But, unhappily, following an enforced "break" Taylor was hit before being allowed to step back and a rather confused referee stopped the contest in his opponent's favour.

The trophy was lost, but the fifth bout provided the best boxing of the tournament. T. Gibson (*Guy's*) met P. Wood (*University*), by whom he had been beaten earlier in the season. With little to choose between them both boxers attacked and counter-punched skillfully, using their feet well. In the final round, the two contestants stood to and hit freely, but whereas Wood kept his eyes to the front Gibson too often turned his head to the floor when delivering a punch. At the bell, Wood was given a close verdict.

The heavy-weight contest was a short and uninteresting affair. J. Cook (*Guy's*) met D. Jones (*University*). Cook, the taller of the two, appeared hesitant with his punches and clumsy in his movements. His shorter, yet agile opponent, seemed untroubled and in the second round put Cook down with some hard blows to the head and body. The referee stopped the contest.

The seventh and final defeat came when J. Weedy (*Guy's*) was put down on two occasions and the referee again stopped the contest. Weedy was unable to tie his man down and whilst scoring with several good right hooks to the head in the second round, he also missed frequently. The bout was stopped at the beginning of the third round.

With the exception of Gibson and Taylor, the other members of the Hospital's team appeared unable to turn their obvious enthusiasm into controlled and intelligent boxing. Much energy was wasted by a failure to assess an opponent's weaknesses and abilities and by a lack of precise and thorough punching. The University's team was stronger than that challenged in previous years, but lessons learnt in this overwhelming defeat will not be invaluable.

The tournament was well supported by a large contingent of followers from the Hospital, who responded loudly to the not impartial announcements by the M.C., E. Chater. Several nurses charmingly enticed the audience to subscribe to the local Mayor's charity.

SHOOTING

The Hospital 'A' team moved down to fourth position in the table following their defeat by University College Hospital 'A' by 483 points to 477. In the Second Division, Guy's 'B' remain in third place having tied with Bart's. 'C' at 430 points all.

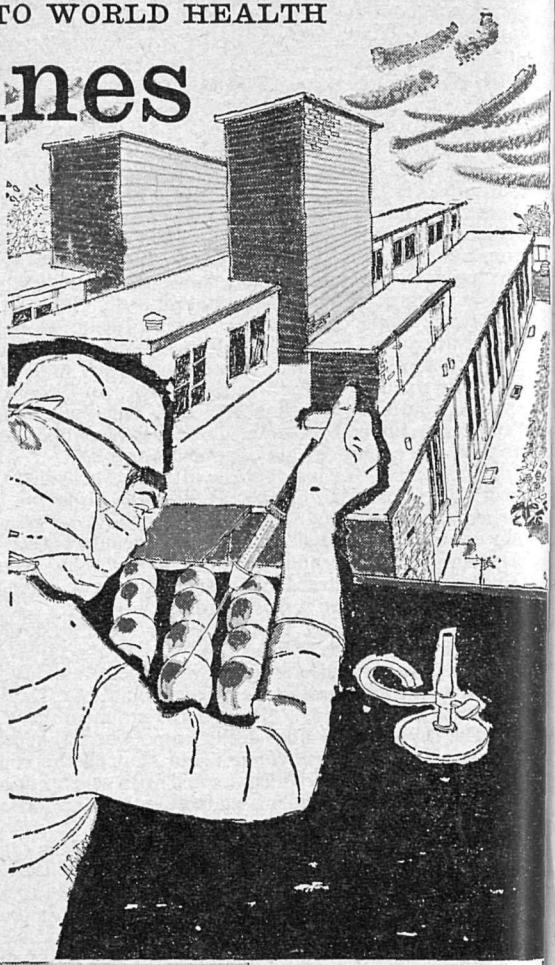
Other sports are still hit by the weather. The Rugby, Football and Hockey Clubs have now been without matches for seven weeks. Exercises, basketball, squash and road-running have provided poor substitutes in a monotonous effort to keep fit. Rumour has it that the Squash teams have been playing matches but no results have been seen.

IAN BAKER.

GLAXO

CONTRIBUTIONS TO WORLD HEALTH

Vaccines



Since 1936 when Glaxo first introduced a whooping cough vaccine, immunology has claimed an increasing share of their activities. Glaxo assisted in the preparation of the British Standard Pertussis Vaccine, subsequently accepted as the International Standard. Four years ago a new biological research unit costing nearly half a million pounds was opened at Greenford. Its modern equipment and specially designed laboratories provide the setting for much stimulating and successful work. The present range of Glaxo immunologicals includes products which offer protection against tuberculosis, influenza, tetanus, diphtheria and poliomyelitis. The search for new or improved vaccines goes on. There are still some exciting and significant chapters to be written in this vitally important field. What was true a quarter of a century ago when Glaxo first worked on vaccines for children is just as true and vital now, 'for their tomorrows, we work today'.

POLIVIRIN

GLAXO

Glaxo Laboratories Ltd.
Greenford. Middlesex

In April, 1955, when results of the American trials were announced, Glaxo had already made pilot batches of a Salk-type vaccine. Known as 'Polivirin' it was the first poliomyelitis vaccine to be made on a large scale in this country. M.R.C. reports consistently reaffirm its safety, potency and efficacy.

Results

CROSS COUNTRY

2nd February, 1963.

U.H. Championships

Guy's—3rd.

Individual positions :

M. Hutchinson 13th, 36 mins. 12 secs.
V. Holt 14th, 36 mins. 20 secs.
D. Cooper 17th, 36 mins. 52 secs.
E. Bowen-Jones 23rd, 37 mins. 53 secs.
P. Witting 24th, 37 mins. 54 secs.
N. Tilling 28th, 39 mins. 05 secs.
A. Davies 29th, 39 mins. 22 secs.
A. Lakin 30th, 39 mins. 35 secs.
R. Jones 34th, 40 mins. 36 secs.
D. Silk 40th, 42 mins. 05 secs.

SHOOTING

United Hospitals' League

Division I. Guy's 'A' v. U.C.H. 'A'.

Result—lost 477 pts. to 483 pts.

Team :		
	D. Wardle	96 pts.
	R. Ringrose	96 pts.
	P. Jordan	95 pts.
	R. Jenkins	94 pts.
	M. Thomson	96 pts.

Division II. Guy's 'B' v. Bart's. 'C'.

Result—draw, 430 pts. all.

Team :		
	N. G. Daws	90 pts.
	D. P. Lieberman	88 pts.
	T. Martin	85 pts.
	A. Kumar	84 pts.
	G. Franklin	84 pts.

HOSPITAL INFORMATION

APPOINTMENTS VACANT

GUY'S HOSPITAL AND THE SOUTH-EAST METROPOLITAN REGIONAL HOSPITAL BOARD

Applications are invited for the post of **Paediatric Registrar** to the Board of Governors of Guy's Hospital and the South-East Metropolitan Regional Hospital Board with duties from 1st April, 1963, or thereabouts to 30th September, 1964. The appointment will be made jointly by the bodies concerned and will be held in the first instance at the Royal Alexandra Hospital for Children, Brighton, until 30th September, 1963, and at the Evelina Hospital of Guy's Hospital from 1st October, 1963, to 30th September, 1964.

Forms of application are obtainable from, and should be lodged with the Superintendent, Guy's Hospital, S.E.1, not later than **23rd February, 1963.**

EVELINA CHILDREN'S HOSPITAL OF GUY'S HOSPITAL

Southwark Bridge Road, London, S.E.1

Applications are invited for the post of **Resident Paediatric House Officer** (with casualty duties) for six months from 1st April, 1963.

The appointment is recognised for the D.C.H. and consists of four months medicine and two months surgery. Candidates must be registered practitioners and should apply giving age, nationality, qualifications (with dates), and copies of three recent testimonials, to the Hospital Secretary by first post on **Friday, 1st March, 1963.**

PASS LIST

CONJOINT BOARD

D.A.

T. M. Bull — Barbara K. Oliver
Patricia H. Curry — P. M. J. Tombleson

D.P.M.

J. H. Evans

D.M.R.D.

F. P. Greenwell — H. E. Inniss-Palmer

D.L.O.

EXAMINING BOARD IN ENGLAND

Final Examination
L.R.C.P., M.R.C.S.
January, 1963

Pathology

J. R. Bernard — J. H. T. Marshall
Cynthia M. Britton — A. Martin
C. Chantler — F. Navab
D. K. C. Cooper — R. A. Nicholson
V. E. Egwuatu — W. A. Norman
N. S. Faithfull — M. C. Pearson
C. N. Garstang — D. J. H. Richmond
R. P. Hollingsworth — A. S. Russell
R. I. Kennedy — J. B. M. Shepherd
D. S. King — V. Tanboonrithi
R. Kumar — S. M. Wood
J. M. Latham

Medicine

J. N. C. Atkinson — J. H. J. Marshall
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J. A. Child — L. C. Nash
Mehrbanoo Faruhar — R. A. Nicholson
B. S. Kalsi — C. F. P. Wharton
R. D. Lee — M. J. Wright

Surgery

J. W. V. Barrett — M. P. Jeffery
F. D. H. Birkett — Danuta M. H. Laganowska
N. F. Boyd — R. D. Lee
B. V. H. Bing — M. J. Lim
P. R. Camm — A. Martin
J. C. G. Carmichael — R. G. May
J. A. Clarke — F. P. McGinn
E. E. Cockayne — Mary Restell
J. A. Child — A. G. Richards
M. E. Conybeare — B. L. Robinson
Ann Coxon — A. G. Robson
A. G. Cumberland — J. K. Scott
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J. L. Day — M. G. Sharman
J. A. Dickinson — M. Singh
F. F. J. Djabanor — M. V. Smith
W. S. Foong — J. H. Steadman
W. D. A. Foster

Juliet C. Gardner
H. J. L. Griffiths
E. H. Harley
R. P. Hollingsworth
P. Ivanans
P. A. Ustianowski
R. J. Walden
C. F. P. Wharton
D. R. Wilson
B. S. Worthington

Midwifery

C. Chantler
D. K. C. Cooper
V. E. Egwuatu
Mehrbanoo Faruhar
C. N. Garstang
B. S. Kalsi
D. S. King
R. Kumar
J. M. Latham
R. A. Nicholson
W. A. Norman
M. C. Pearson
I. C. Perry
B. S. Pound
J. H. Ransford
A. J. Richards
D. J. H. Richmond
J. B. M. Shepherd
D. R. Wilson
S. M. Wood

NURSING NEWS

Entered:

Staff Nurse B. Stewart to *Queen.*

Staff Nurse W. Watkinson to *Maudsley Hospital*

PAPERS BY GUY'S MEN

influenced variability in the response to drugs. *J. Pharm. Pharmacol.*, 1962, **14**, Suppl. p. 20.

Engel, C. E. Clinical cinematography. *Res. Film*, 1962, **4**, 330.

Evans, J. H. On disturbance of the body image in paraplegia. *Brain*, 1962, **85**, 687.

Hutchison, J.G.P. Method for permanent preservation of antigen-antibody precipitation lines in agar. *J. clin. Path.*, 1962, **15**, 185.

Hutchison, J.G.P. Muller's phenomenon and its relationship to plasminogen activation and to blood constituents producing opacity in an agar cell. *J. Path. Bact.*, 1962, **84**, 289.

Latham, B. A. and another. Prednisolone phosphate in rheumatoid arthritis. *Lancet*, 1963, *ii*, 1190.

Pownall, R. H. Intravenous administration of sedatives and anaesthetics in dentistry. *Dent. Hlth.*, 1962, **1**, 4.

Rees, R. J. W. Application of tissue culture methods for the growth of *M. lepraemurium* and *M. leprae*. *Ann. Soc. Belge. Med. trop.*, 1962, **4**, 595.

Wright, E. A. and others. Maximum protection of mice against 8 MeV electron irradiation. *Nature*, 1963, **197**, 91.

Wright, P. H. and others. Properties of insulin antibodies produced by the guinea pig, horse, sheep and man. *Diabetes*, 1962, **11**, 519.

Zorab, P. A. and others. Estimation of height from tibial length. *Lancet*, 1963, i, 195.

PERSONAL

Special rates for Guy's Staff, Students, Nurses, and Subscribers to the Gazette. 5 words 10s. 6d. 15 words 21s. 0d. Box Numbers 1s. extra.

TO LET

MARBELLA, Costa del Sol. Luxury flat 50 yards beach/town centre. Terrace overlooking sea. Sleep four. Fridge, linen, crockery, all services. High season 13 guineas, mid-season 11 guineas, low season 9 guineas, maid included. Some vacancies. Box No. 327.

FOR SALE

MODERN mobile mahogany Dental Cabinet with built-in X-ray Viewing-box. £35. Kodak Pyramid darkroom Safelight .. 35/- Caulkes Alloy Mercury Gauge .. .. £1 Box No. 331. WEL 6345.

Replies to Box Numbers should be addressed to *Gazette* Office, Guy's Hospital, London, S.E.1.

CHANGES OF ADDRESS

Mrs. E. M. A. Playll, 52, Drybridge Hill, Woodbridge, Suffolk.

J. C. Gazet, F.R.C.S., Apartment 3N, 550, Surf Street, Illinois, Chicago, U.S.A.

W. T. Sholl, B.D.S., L.D.S., R.C.S., "Moorings", 61, St. Leonard's Road, Deal, Kent.

G. Willett, Douglas House, Addenbrooke Hospital, Cambridge.

R. A. Bruce, B.M., B.Ch., D.M., M.R.C.P., Redlands, Rupert Road, Myddleton, Ilkley, Yorks. Tel. Ilkley 1973.

Dr. A. H. Douthwaite, Lister House, 11, Wimpole Street, London, W.1. Tel. LAN 3475/6.

Dr. T. G. Nash, Royal Victoria Hospital, Shelley Road, Boscombe, Bournemouth.

Dr. A. B. Richards, M.B., 12, Chesham Place, Brighton 7.

Correction:

Edmund J. Moynahan, F.R.C.P., The Malting House, Arkesden, Saffron Walden, Essex. Tel. Clavering 367.

BIRTHS

JAWORSKI.—On 3rd January, 1963, to Diana June (née Gale), and Waclaw F. Jaworski, M.B., B.S., a daughter (Helena, Olivia, Felice).

KING.—On 12th January, 1963, at B.M.H. Rintehr, B.A.O.R., to Veronica (née Headley, M.C.S.P.), and Ray King, M.B., B.S., a son (Martin James), brother for Stephen.

LEES.—On 14th January, 1963, at the Louise Margaret Hospital, Aldershot, to Romola née Hatch, S.R.N.), and Lionel Lees, M.B., B.S., a daughter (Alison), sister for Sarah and Caroline.

PENNY.—On 24th January, 1963, at Guy's Hospital, to Gillian (née Needle), and Richard Penny, M.B., B.S., L.R.C.P., M.R.C.S., a daughter, Susan Jane.

WHIMSTER.—On 21st January, 1963, at Niue Island, South West Pacific, to Sybil (née Wallace), a son (Peter William).

GILL.—On 28th January, 1963, at Redruth Hospital, Cornwall, to Kay (née Robinson, M.C.S.P.), and David C. Gill, M.B., B.S., D.C.H., a son (Nicholas Philip), a brother for Anthony and Christopher.

GOLDEN WEDDING

GREENWOOD.—On 8th February, 1913. Dr. Arthur Atkins Greenwood to Phyllis Cobely. Present Address, Box 8225, Mombasa, Kenya.

DEATHS

HINCHLIFF.—On 23rd January, 1963, Charles John Hinchliff, L.D.S., R.C.S., of 29, Ridgeside Avenue, Withdean, Brighton.

EDITORS W. G. REEVES
S. M. WOOD

GUY'S HOSPITAL GAZETTE

A JOURNAL OF MEDICINE, SURGERY, DENTISTRY AND HOSPITAL NEWS

PUBLISHED FORTNIGHTLY

Vol. LXXVII. No. 1946 *23rd February* 1963 *One Shilling*

PASSIM

Conversion Symptoms

50 per cent. of clinical students often refer to the *British Medical Journal* and 26 per cent. to *The Lancet*, according to a report in last week's issue of the latter. So there must have been many Guy's students as well as thousands of Guy's doctors who saw a letter in the *B.M.J.* of two weeks ago about five cases of hypothermia at Guy's Hospital, and they might have been excused a modest blush for the state of science teaching at their Alma Mater when they read some aberrant temperature conversions in the letter. The temperatures were stated as ranging from 86° to 92°F (65.6° to 68.9°C). [*sic*].

The letter has provoked several discreet comments about our state of readiness to join the Common Market, but the most amusing comment is unintentionally contained in the letter itself: 'None of the patients shivered'.

It has also provoked the following:

Too hot ! Too cold !
These terms are not for registrars at Guy's,
For they prefer a measure more precise
Like Fahrenheit, and then by some device
of maths and algebra to metricise.

"Subtract ? Summate ?
What happens to that figure thirty-two ?
No matter if the temperatures aren't true,
We must record that we're amongst the few
Who've seen a case of hypothermia too."

What irony,
If they should ever suffer this disease !
They would recall the mathematic ease
With which they warmed their patients here, and seize
The chance to stay in Bermondsey to freeze,
So it might be by Centigrade degrees.

Clinical Cases

To Honor Oak Park Station staff, it must seem as though the Guy's Spring Term has not yet begun. But despite the almost complete lack of sport in the last four weeks, there is all the usual evidence of term-time at the Hospital itself; queues outside the Spit, bedlam in the bar, and mid-day Clinical Lectures inaudible for a crowd outside the Anatomy Theatre showing a unanimous disregard for the notice "Silence—Lecture in Progress"—a change from the serene few weeks of vacation when only clinical students remain, aloof in their besuited uniformity.

This sartorial conformity imposed on clinical students from their earliest ward-clerk days demands a sombre suit and little opportunity to display individuality, apart from an occasional brocade waistcoat or a striped shirt. But a new fashion is on the rampage—the briefcase. Here at last is boundless scope to mix personal tastes with a practical, dignified article.

Most fashionable are expensive bulky leather cases complete with a full-sized textbook, pyjamas, shaving kit, sports clothes, etc.; the mark of the medical nomad with a flat in Camden Town. There is high status for the man who strolls through the Park swinging the little attaché case which his father used as a young G.P., and his father before him. Then there is the music-case: "I did two years at the R.A. before I answered the vocation". Poorer brethren are those whose document case is in black plastic, with a zip that jammed three firms ago, but from which protrudes a discreet business-like length of stethoscope. Duffle-bags are no longer acceptable in intellectual circles and to lower oneself to the level of a sandwich-board-man by carrying an airline's name on the side of a plastic bag without receiving advertising revenue is simply uneconomical. Only one ward clerk has so far had the courage to sport the original doctor's little black bag, and he was a visiting American student.

The cult of case-carrying has grown insidiously over the years until the briefcase has now acquired the significance of a mayor's mace: an untidy assortment of cases outside a ward door is the symbol of a firm in session.

Following on the discussion in our last issue, of the inclement and short-sighted political attitude towards financing medical research, it has come to our notice that progress in at least one new field has received financial recognition at Guy's. The Guild of Ex-Patients and Friends of Guy's has recently given £1,500 to the Anaesthetic department for an artificial respirator. This will be used to assist with the development of techniques in cardiac surgery for infants and young children.

GUY'S DIARY

FEBRUARY

EXHIBITION *Conjoined Twins.*

26th T 1.00 Mr. CLARKSON. Clinical Lecture.
Tracheostomy in Burnt Children; and Plastic Sponges as a Temporary Skin Cover in Burns.

28th Th 1.00 Mr. WASS. Clinical Lecture.
The Principles of Treatment of Fractures.

MARCH

1st F 2.15 Combined Round. Dr. MACLEAN, Dr. MACKENZIE and Sir Charles SYMONDS.

4th M 1.00 Mr. ROSS. Clinical Lecture.
Aortic Valve Surgery.

5th T 1.00 Mr. READING. Clinical Lecture.
Surgical Treatment of Deafness.

7th Th 1.00 Dr. HARDWICK. Clinical Lecture.
Enlargement of the Liver and Spleen.

8th F 1.00 Professor KNOX. Clinical Lecture.

8th F 1.00 Mr. D. J. NEILL. Dental Clinical Lecture.
The Vertical Dimension of Occlusion.

9th S 10.0 Departmental Round by Mr. H. S. HANLEY. Clinical Theatre.

12th T 1.00 Mr. ECKHOFF. Clinical Lecture.

An annual lecture in child psychiatry has been established at Guy's to be called the Sarah Stoltz Lecture.

As announced in November it is proposed to make a presentation to mark the retirement of Mr. George Winston. Any further contributions should be sent to the Medical School Office as soon as possible as the presentation list is closing at the end of this month.

NOTICE

Pupils' Physical Society

Symposium on Backache

Following the success of the Symposium on Renal Hypertension last December the Pupils' Physical Society is holding another symposium on 'Backache'.

The meeting will take place in the Demonstration Room on the Second Floor of New Guy's House, at 5.30 p.m., on Tuesday the 26th February. Contributors will be specialists in the field of general practice, orthopaedics, physical medicine, radiology, gynaecology and psychiatry. They will discuss the differential diagnosis, investigation and treatment of this common complaint. The chair will be taken by the Secretary.

MINOR NEUROLOGICAL DAMAGE IN YOUNG INFANTS

by N. J. O'DOHERTY

Precise definition of the neurological status of young infants epitomises the difficulty of assessing irrational patients whose level of physical activity and complaisance varies so widely at short intervals, so that many clinicians tend to dismiss its value as an obscure exercise for the super-specialist. Such pessimism is understandable if the casual examiner, as he so often does, starts by summarily eliciting the Moro reflex on a fully clad newborn in the depths of a bassinet or takes an older infant straight from his mother's arms to lie him flat on a couch. Failure is likely after such a rude surprise, for adequate examination makes considerable demands on time and patience and success requires the application of a thorough-going methodical approach. Of the basic conditions for adequate examination the most important is the mental attitude of the examiner: a smooth examination will take about fifteen to twenty minutes and the process of working through the set "drill" is normally one of gleaning minutiae which must be carefully recorded. Infants should always be seen at an optimal time in relation to sleep and feeds and re-examination must be similarly scheduled. The room should be warm and quiet, without over-bright lighting, and free of attractive objects likely to focus visual attention. A suitable surface such as a covered table-top or couch is required during the examination and at some stage the child is completely undressed.

Since at this age predictive assessment of future intelligence is not possible examination is primarily concerned with the presence or absence of skills normal for age, and the possible presence of abnormal motor signs. Less importance has been attached to the recognition of lateralisation in deficits or abnormal signs, especially where they are mild or inconstant, but there is good agreement on adequate interval examination by different observers during the first year of life and the assignment of "hemipareses" as part of routine assessment may prove of help in elucidating the subsequent fate of neurogically abnormal infants. To get full value the examiner proceeds through the test items in an ascending scale of disturbance: first observation, then the application of various stimuli, followed by handling until finally crying and behaviour under stress constitute final items to be scored. The number of possible observations is so large that the examiner must be eclectic, but if the examination flows smoothly up to thirty items can be fairly scored without tiring the baby. The mind of the examiner must, as it were, work at two levels throughout, at any one instant noting reflex actions like palmar grasp or suck, while less consciously recording cumulative impressions of spontaneous events such as reduced motor activity, over-placidity, jittery tremulous movements, or the like. The vogue of certain tests and the mode of

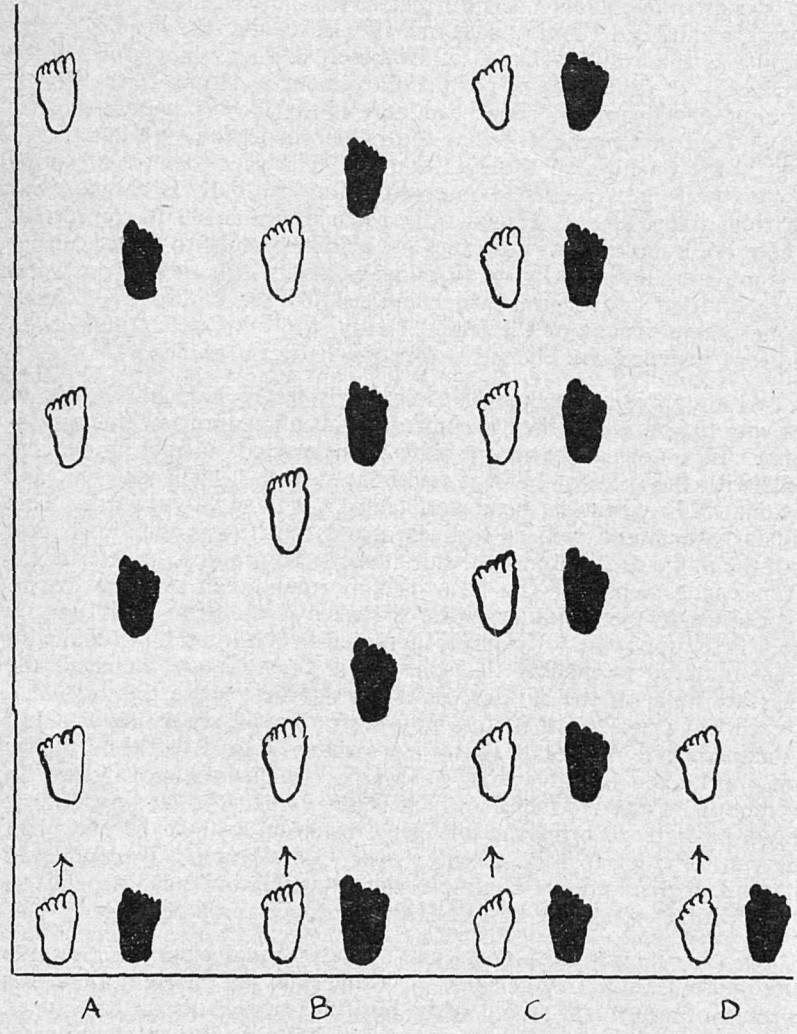
examination vary from centre to centre but it is clear that there is good agreement between the findings under different disciplines provided assessment is adequate.

Evaluation is at its most complicated during the first week or two of life but especially gratifying in that the physical signs should show their best degree of agreement on daily examination by separate individuals. Many competent authors have outlined schemes for examination so that the basic reflexes and motor skills are well known but some comment may be informative for the occasional examiner. With the child quiet and at ease one should see that the head is in the midline as tonic neck reflexes, allowable at this age, may give a false impression of difference of posture movement and tone in the limbs. Without any disturbance one can note if the face is symmetrical at rest and on movement, whether the palpebral fissures are equal and what is the position of the eyes at rest. The general level of spontaneous body movements is observed before the baby is handled but the total impression is gained only when examination is completed. Where body movements are excessive it is important to note whether they are tremulous, jerky or writhing to distinguish them from local or generalised convulsions which are usually the hallmark of intracranial haemorrhage at this age. Lastly, the blink reflex and crude auditory response are elicited before the baby is handled.

Although not the first of these items tested it is interesting to consider the stepping reflex in some detail as an example of fine assessment. If a normal newborn baby is supported upright under the arms with the soles of his feet on a flat surface he will step forward automatically when the head and trunk are inclined forward. This gait is regular and well co-ordinated and the heel is put down first with the ankle dorsiflexed: the infant seems to progress in determined seven-league steps. If the baby is abnormal much may be learnt. Hypotonus in the shoulder girdle is sensed if the arms yield unduly when first supported. If tone is increased in the lower limb difficulty is encountered in placing the soles flat: the toes are bunched, the heels are held off the surface, or if the Adductors are tight the feet are seen to press together and may even adopt a scissoring position spontaneously. When the baby steps many degrees of abnormality must be looked for, the most obvious of which is scissoring due to overaction of the Adductors which is seen when the leading limb is drawn medially to bring the following instep up against the other calf and cause the leg to have to "step over" its fellow to advance; mild bilateral degrees are so common that lateralisation may depend on other features which are best illustrated in diagrammatic form.

In (A) the left foot starts and initiates equal steps on alternate feet: lateralisation may be achieved if one side, say the right, describes its range of movement more slowly, but this is a nice distinction indeed and rarely observed. If there is more definite weakness of the right side the baby may lose about one quarter (B) or one half (C) of a full stride, presenting a "hopalong" mode of progression with brisk left and slow right components that would be a striking finding if we imagine it in an adult suffering from a nervous disorder. In (D) the

deficit is even more pronounced and the right foot cannot be induced to follow its fellow. It is by design that in each of the diagrams the left foot leads off and one would find it to be so in most repeat tests of stepping on this subject. If the baby repeatedly starts off on the left side one should try to "favour" the right by leaning the baby slightly to that side when leading off and if this inducement fails it ends strength to the original observation of right-sided weakness.



In other items with a bilateral response one must always try to qualify the symmetry of the movements. In an asymmetrical Moro reflex the good arm is seen to move faster through a larger arc and return close to its resting position while the slower side may have a

smaller arc with jerky or tremulous movement and finally fall short of its resting point. It may be fair to state that the neck traction response is present but not enough if a straight elbow on one side indicates relative weakness in contrast with the slight flexion due to better muscular contraction on the other side. Some nuances of difference may be noted in items requiring bilateral stimulation, for instance, convincing fractional slowness of plantar grasp can be repeatedly demonstrated if both feet are held close together and the stimulus applied simultaneously. Such minor degrees of difference would be undectable if both sides were not evaluated together. On reflection it will be clear that the above remarks apply to, and should colour our appraisal of, many other tests such as palmar grasp, placing, tonic neck and rooting reflexes.

Finally, it may be said of newborn infants that one observes some neurological signs whose distribution may suggest that one side is "more normal" than the other. For example, intermittent fisting is allowable but one should recognise lateral preponderance or whether one thumb is held in the palm and the other out. Similarly, differences in plantar response, whether extensor or flexor, should be looked for and minor degrees of ankle clonus should not be dismissed without an attempt at lateralisation.

It could be said that newborn children fall into four groups neurologically:

1. Those with a normal sign-out on all test items.
2. Those regarded as normal but meriting comment on isolated or collective minor deficits with or without lateralisation.
3. Those showing a definite total neurological deficit, especially with lateralisation which remains on repeat examination during the neonatal period. The significance of this situation is often not appreciated at the time because of the inadequacy of examination so that these children are consequently relegated to group (2) and such is the subsequent tendency to improvement that little or nothing may be found in later infancy even on specialist examination where the initial abnormality should have been classed as moderate.
4. Those with obvious abnormalities such as gross hypotonus, decerebrate rigidity or kernicterus where profound disturbance is obvious and detailed examination often to be avoided.

Examination at four months

Planned re-evaluation of these children is often undertaken at four months because this is a climacteric in the replacement of primitive reflexes by early definitive motor skills and it is likely that many abnormalities noted in the nursery, although milder in degree, can still be recognised. The iceberg, as it were, is still substantially above water and by definition most of the group will pass scrutiny at the age of one year. At this earlier age they can be confidently segregated within a random sample and good agreement achieved on the assignment of lateralisation in the majority. Formal evaluation is usually undertaken by a special examiner so only brief comment is necessary to exemplify the approach.

If a serious test of hearing is planned this is done first, when the child is best disposed and at his most alert; the mode of testing might be called socio-domestic but although the results are crude they may prove a useful item in total assessment. The approach to the rest of the examination is ordered much as in the newborn but the findings may be categorised differently. Firstly, primitive reflexes like the Moro and tonic neck are absent or vestigial in normal children, for their persistence would impede the performance of definitive motor acts in later infancy. Secondly, new reflexes and special sensory skills, body control and co-ordination will have been acquired; their acquisition is distinctly cephalocaudal and the progress in visual activity, for instance, is strikingly in advance of spinal control and use of the lower limbs, and social overtures produce an appropriate response. Thirdly, some abnormal signs not usually demonstrable in the nursery may now be elicited, such as upper limb posture characteristic of spasticity on passive neck flexion by occipital pressure. Finally, many abnormal signs like hypotonus, excessive fisting, scissoring, etc., will persist from nursery days. In all instances, and especially where no abnormality has been noted at this stage, it is essential to observe the child under emotional stress while laughing or crying in an attempt to unmask transiently any stigmata that may be latent but not beyond recall; in this way one may evoke facial asymmetry, relative paucity of movement on one side, or the adoption of a characteristic paretic attitude.

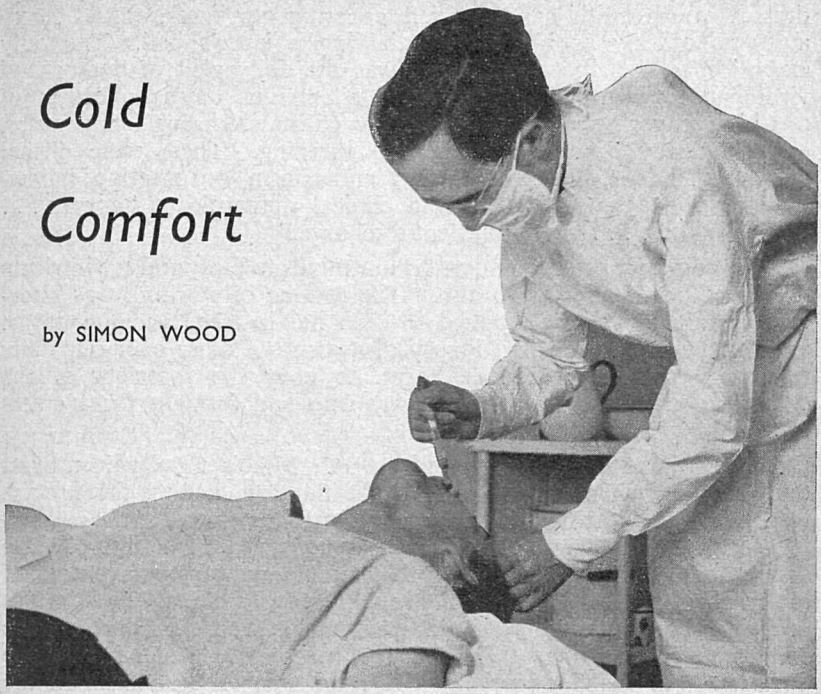
Therefore, a representative mildly affected member of the group might be noted in the nursery to suck poorly and have bilateral sustained ankle clonus with poor stepping and placing on the right side while at four months he might show poor head control, adductor tightness with right-sided unsustained ankle clonus and excessive fisting on that side, thus confirming the persistence of a neurological deficit and giving correct lateralisation.

This account is concerned with the infants of group 3, above, who probably constitute about 10% or more of the average nursery population and represent one of the great unknowns of paediatric neurology. Pioneer work by Prechtl in Holland showed that at the age of five years this group in a random sample selected in the nursery comprised 80% of his children with cerebral palsy, mental deficiency and behaviour problems. Many other conditions such as epilepsy, acute childhood hemiplegia, deafness and specific learning disabilities can very likely be shown to relate to significant deficits in early infancy but the gaps in our knowledge of the natural history are as yet immense.

An adequate comprehensive study is currently progressing in the United States where the National Institutes of Health have undertaken the assessment of 50,000 children randomly selected in more than a dozen university hospitals. The oldest members are now in their fifth year so that they stand on a new frontier that will supply much valuable information. Even if repetition on that scale is not feasible in this country the findings should provide a yardstick for careful continuing developmental assessment of all children known to have had definite signs of minor neurological damage in early infancy.

Cold Comfort

by SIMON WOOD



There is a stage in every medical student's career when he can no longer evade revision of Topographical Anatomy for 2nd M.B., and it was at this stage that Mike and I packed a skeleton and our unthumbed copies of Gray's Anatomy and set off for Harvard Hospital in Salisbury. As experimental subjects of the Common Cold Research Unit of the M.R.C. we were to spend ten days in isolation from the other thirty volunteers, and after receiving a nasal instillation of cold virus culture, wait with the resignation of a caged white mouse for the well-known symptoms to develop. In touch with the world only by telephone, fed through a hatch three times a day, and endowed with that peace of mind known only to those who are Doing Their Bit for medical science, we were in the perfect mood for mechanically assimilating Gray's century-old text.

The hospital was built during the war as an infectious diseases research centre, and consists of orderly rows of stilted wooden huts set in a fenced compound and overlooking the undulating fields of Salisbury. The huts contained separate five-room flats, designed for a pair of volunteers; overheated and equipped with a rudimentary kitchen, radio and darts-board as well as the usual facilities compatible with ten days of hygienic existence. Isolation rules were strict, but when the wooden walls grew to assume the enormity of Changi gaol, we were allowed to muffle up and go for walks in the surrounding fields or even on the more deserted roads, so long as we kept at least thirty feet away from anyone we chanced to meet on the way, and covered our mouth and nose with a handkerchief. Such precautions

were quite unnecessary, for the local populace, seeing two scruffily-dressed youths with handkerchiefs covering our faces, would hurry away as quickly as if we were tinkling a leper's bell. The only exception to this life of seclusion was the daily visit of doctor and virologist to inspect our throats, our previous day's collection of one-blow paper handkerchiefs, and our charts recording temperature, and frequency of nose-blowing and sneezing. These were dismal occasions indeed, for our natural enthusiasm on meeting fellow-humans was deflated by the cold clinical rigmarole of "coryza . . . post-nasal drip . . . muco-purulent discharge."

Not discouraged though, we set our minds to Gray and the intricate details of bones so dear to him. The routine of working was interrupted only by meals, supplied to each flat in large vacuum flasks, and by the eagerly-awaited luxury of a game of darts over our daily free pint of beer. How we began to envy the foresight of the experienced volunteer two huts away who had brought three crates of Worthington with him.

The strange life began to tell on us. Mike's maniacal outburst one morning when he leapt about the flat brandishing the fire-axe was, fortunately for me, not truly homicidal in nature, but the psychologists would not blame him for displaying signs of frustration. One severe test for our psyche equalled the subtlety of the inventors of rat mazes; we, who had been brought up to react to the stimulus of a door-bell ringing by going and answering it, had to suppress the conditioned reflex, for at Salisbury, it was really a signal that the porter was at the door putting our meal-time vacuum flask in the hatch, and under no circumstances were we to go and open the door.

Senses of humour were in no way diminished, and one lunch-time we received a telephone call purporting to be from the Stores Department, saying that there was to be a stock-taking of all hospital chairs, and would we please put all our chairs on the verandah. Dutifully we obeyed, ate our lunch standing, and only when we saw another pair of volunteers out in the compound helpless with laughter and pointing to our pile of chairs did we realise where the call had originated. But more annoying than amusing was the incident of the night-watchman. He was not a happy soul and performed his nightly prowls as assiduously as a prison warder. One night when we were returning from a bed-time stroll and had just closed the compound gate behind us, a bright light shone on our faces and gradually moved towards us accompanied by the mutterings of the watchman. Automatically, Mike's handkerchief went up to his face as the man came within thirty feet of us, but alas, I was too late—he marched up to within a yard of me and boomed "You bin out breaking' isolation ! "

I sincerely hope that no intending volunteer will be put off by reading our experiences. We both passed 2nd M.B. eventually, and would not have missed the glorious final hours of our stay for all the sun on the Costa Brava. Smug with our self-sacrifice and studying, we collected our few shillings wages and set out to meet the world again in a dozen beery environs.

Out of the thirty-two volunteers, only I caught a cold, and I am certain it was from our good night-watchman.

Canada . . .

Some observations for the guidance of Guy's men wishing to live the life of gentlemen Physicians in General Practice

by M. I. LECKIE

It is ironical that in the Country of my birth the G.P. is better trained for General Practice than anywhere else in the world, yet on entering his chosen field is obliged to descend to the level of secretary and general "buck passer", when practising in England. This is not due to lack of ability or desire to be idle, but simply due to pressure of patients, and lack of hospital privileges, among other things.

In this country of my adoption the G.P. is considered, at any rate in the medical schools, to be the lowest form of medical life. The arrows all point towards the dizzy heights of the "Specialist". Yet in this field, where the grass grows so green, general practice is a medical wonderland where the G.P. is in his seventh heaven. Practice is on a different tenor altogether from the average English general practice. Most Canadian G.P.'s expect and have hospital privileges where they have a number of beds for their own patients. Tonsillectomy and adenoidectomy, appendicectomy (appendectomy over here) and herniae are not mysteries which were left behind at Guy's. These are everyday realities, along with obstetric cases, fractured bones, and foreign bodies in the fundamental orifices. Traumatic amputations are dealt with in the best traditions of Guy's Front Surgery (and Patrick Clarkson) instead of being sent to the nearest hospital out-patients. People with coronary artery occlusions are not quickly given an injection of morphine and sent to the physicians, but are given the loving care of their own family physician and the benefit of modern treatment. All this in well equipped cottage hospitals with up to forty beds.

Any sane young man contemplating general practice under the National Health Service, must have at least tried to escape the fall into the abyss by attempting a specialty, or by hanging on to house jobs for as long as possible. During these months or years of house-man and senior resident he inevitably picks up considerable practical experience. The crying shame comes when he slips into the frustration of this fourteen year old phenomenon, the National Health Service general practice: here he knows that he is stuck for life with an income equivalent to that of a well-to-do London docker.

In Canada, from Newfoundland in the East to Alberta in the West, there are openings galore where this wasted talent could be used to the full. The average general practice is a private one with between 2-3,000 patients, city or rural. A well established practice will gross between £18,000 and £30,000 a year with overheads to match the location. The buying power of three dollars is every bit as good as a pound note, and income tax is about half that of Britain.

You might conclude from the foregoing that the doctor in Canada is 'spoiled'. Not at all, this is the old law of supply and demand. If a community feels that it has reached sufficient size to support a

doctor, and is unable to secure the services of one, it will, if progressive build a house and surgery in order to do so. Better still it will construct a hospital as well. Needless to say this happens only in more affluent areas, but is surprisingly common. The lucky fellow then will be greeted by a fine centrally heated home and 'office', a hospital on the doorstep, a decent income, and last but certainly not least, pleasant and considerate patients.

Canada is not all medical practice, but is a magnificent and changing vista of climatic and scenic experience from coast to coast; this is a trek of 4,500 miles from St. Johns Newfoundland to Vancouver Island.

Newfoundland is a rugged island where paved roads are the exception and transportation is usually by car or boat, along rocky routes or around rocky bays. Across the island by road is an adventure not to be undertaken lightly in Mother's Morris Minor, but with consideration for bedrock trails and the itinerant moose (a deer the size of a large horse) who often stands blocking the road ! In winter, snow drifts fill in before the snow-plough can get through and journeys can be hazardous. Fishing communities abound, and in summer, boating and fishing are idyllic pastimes in hugh bays, that one need share with no one. There are no Festival Halls or Kensington Museums around the corner so one has to be prepared to decide what entertainment tomorrow will bring, be it golfing, fishing, swimming, water skiing, skiing or exploring the out of the way spots.

Nova Scotia is as its name implies—like Scotland; with most of its population around the coastline. There are good roads and fairly good prospects for the general practitioner, but good practices become vacant rarely.

The Prairies of Alberta, Manitoba and Saskatchewan, have to be experienced to be believed. You can motor for hundreds of miles along dead straight roads with never a hill or undulation in the land. This admittedly does get monotonous, but one at least gets a view of a town every 15 miles or so, well off the road. There are parks, run by the Canadian Government, where there is usually a big lake for boating and swimming.

Winter on the prairies when viewed from a centrally heated house does not look a great deal different from the summer. On venturing out of doors the 20° below zero temperatures tend to inhibit the Hering-Breuer reflex for a second or two. Nevertheless the sun still shines with unabated brilliance, catching the hoar frost on the trees and the vast unfenced wheatfields, covered with a thin blanket of snow.

The green fields of Kent fenced in as they are, somehow confirm the lack of opportunity at home. Gone is the day of the comfortably off G.P., who sits back in his leather armchair and drawing on his pipe in his well furnished English "castle", ponders whether to go to the south of France for his holidays, or sail to the Scillies in his 5 tonner. AH ME ! At least I can do it in my Canadian Castle.

The writer is in practice at Carnduff, Saskatchewan, Canada. Any questions regarding practice or opportunities in Canada will be answered with pleasure.

CRITICISM

"Advance to Go"—*University Revue*

by MALCOLM BURKE

"The play's the thing

Wherein I'll catch the conscience of the King"

And, indeed, the Regal Head of State escaped the satirical pen of student revue writers no more than the parson and the politician in the latest presentation by Revulu—known, in less economy, as the University of London Revue Society. The idea was almost brilliant in conception—a musical game of Monopoly in which the link characters Boot, Hat and Car, moralised upon man's petty prejudices and ambitions as they advanced around the board (usually where the lighting wasn't) of various properties, on each of which were based the musical offerings. The material contained a deal of unoriginal subjective satire (for what revue can afford to be unsatirical ?) with refreshing and pungently humorous writing; and of course a popular and recurrent theme was that in which we all take an unhealthy and unacademic interest !

After a disquieting opening chorus and a display of stridulating incompetence from the leading lady artiste, Hat appeared momentarily before he was lost in the gloom. Consternation. Was his entry premature, or this merely an enforced electrical economy? The lady near the front put down her knitting. But power and confidence were soon restored as Hat reappeared and with Herculean exertion spun the nearer of the apparently loaded dice. He advanced; we suffered in a delirium of exquisite misery as a sketch was performed in the Whitechapel land of waving and grasping palms.

Hat, Car and Boot

The setting was a double 'back-projected' picture varied to reproduce the property square in question; a device which scored

successfully, although when Hat 'landed upon' Northumberland Avenue and we were diverted to the moors of the same name, we arrived there a fraction before Hadrian's Wall. Three assorted Roman warriors —and a helmet under which I suspected a fourth—in skirts of indecent utility tunefully lamented their prolonged posting to the sheeplands of North Britain. A very clever little song this, craving the excitement of the megalopolis, and something else unprintable or at very least "a gay crucifixion down the Appian Way."

It was clear what was in store; I and the chap downstairs began to enjoy it (the lady with the knitting had gone). During a judicial diversion in Bow Street, I marvelled at the acoustic efficiency of the Union Assembly Hall as the voice of the prompter came booming back towards the cheapest seats.

The original scripting was most wittily evident in items such as The Leicester Square Dance, one call for which ran "everyone retire to the Ladies and the Gents"—very close and melodic parody. In fact the music overall was excellent, and Vine Street provided an original spiritual and a faintly irreverent touch—"I like my Holy Spirit 100° Proof."

Originality was extended to the entrance hall where instead of 'stills' of the show, photographs depicted the performers in mufti and on location in the 'sights' of London which provided the settings for the revue. These failed in their being of a low technical standard; yet a commendable idea.

Well, I enjoyed it, I enjoyed the Englishman and his insularity, his reluctance to lose the Ashes and the Empire embodied in the Old Kent Road, and song of the Eastern Pioneers "providing you're not Scot, Coloured, Irish or Jew, there's a welcome in Kent for you".

The performance exhibited varied skills of actors and technicians alike, soundness in production with acceptable deficiencies and a clear objective safely attained though the principals showed an incredible feebleness of voice projection when weaving the scenic cameos into one memorable entertainment.

In the next issue "Criticism" covers the Guy's Hospital Theatre Club production of Look Back in Anger by John Osborn (25th February—1st March).

CORRESPONDENCE

Letters to the Editor of the Gazette

The Art of Sterilisation

SIR,—What can have prompted the sweeping and irresponsible statement by your reviewer, John Steadman, *Gazette* 12th January, that "the average doctor in this country is virtually never responsible for, or interested in, actual sterilization techniques" ? Is the average doctor (whoever is meant by this ?) not interested in preventing infection of his patients by improperly sterilised syringes, needles, scalpels, catheters, dressings, and solutions which he may use ? The reviewer

need not imagine that pre-packed sterile goods are available to everyone. The diabetic patient for instance needs instruction on sterilisation techniques; who instructs ? If the doctor goes abroad or practices in an area or a hospital where he can no longer obtain sterile materials pre-packed, he must consult a textbook: if the recommendation that the reviewer seems to suggest is followed, he will not find the information he desires.

It is a sad thing that your reviewer regards sterilisation as of no interest to him; it is this mental attitude that has led to a large proportion of hospital autoclaves being found to be incapable of doing their job—and sterilisation techniques, even in hospital wards, often nothing more than empty rituals.

Yours etc.,

J. G. P. HUTCHISON.

University Department of Bacteriology,
Western Infirmary, Glasgow.

We have shown this letter to John Steadman who writes :

Many of the sterilization procedures referred to in the book under review are designed to sterilize items of equipment—*e.g.*, theatre equipment—for which the surgeon is not directly responsible. Increasingly, sterilization is carried out by special units and departments, and the results made available for the doctor. It is certainly true that detailed knowledge of sterilization techniques is necessary in some parts of the world; doctors who will need such information must take special steps to acquire it. However, I do not think that the details given in most undergraduate textbooks are necessary for qualifying examinations.

I do not see why we should counter faulty autoclaves by making graduates mug up more about sterilization for their examinations any more than we should counter faulty E.C.G. machines by making graduates learn about medical electronics. In both cases the adequate functioning of the equipment, which is naturally very important, would far better be left to competent specialists.

"The '59 Club"

SIR,—I shall be very grateful if you would allow me space in your columns to inform those Guy's men and women who qualified in 1959 that the fourth Annual Dinner of the '59 Club has been arranged for the 22nd March, at the Anchor Tavern, Bankside, at 7.00 for 7.30 p.m. I am writing to all the members whose address I know, but if anyone does not hear from me and would like to come, they should inform me by 15th March at the latest.

Yours etc.,

D. N. LANDON,
Hon. Sec. the '59 Club.

Anatomy Department, Guy's Hospital, S.E.1.

REVIEWS

In our last issue we published a review of 'A DOCTOR'S GUIDE TO COURT'. *In view of a printer's error we feel that the sense of the review was distorted, and we reprint a corrected version in full.*—EDITORS.

A DOCTOR'S GUIDE TO COURT.

By KEITH SIMPSON. Butterworth. 1962. *Price* 30*s.*

Professor Simpson's new book provides a layman's guide to the courts of the land with reference to the special problem which will concern the medical profession. Emphasis is laid throughout that much avoidable embarrassment is suffered by doctors in court due to lack of familiarity with environment, procedure

and the wiles of the legal profession. The book should do much to forearm the uninitiated with its help in the preparation and presentation of medical evidence and its practical hints on behaviour in the witness box.

There are chapters devoted to the special problems of drunkenness, assault, cases of abortion, etc., and, although some of the material will be of more interest to the budding forensic pathologist, it is essentially designed for those in other fields. Relatively short and well illustrated with cases throughout, it is a valuable book; for there are few of us who will not be required to give service in the courts.

T. A. M. STOKER.

ACUTE HEMIPLEGIA IN CHILDHOOD.

Edited by MARTIN BAX and ROSS MITCHELL. Little Club Clinic No. 6. 1962. *Price* 17*s.* 6*d.*

This publication embodies the papers and discussions of the Little Club conference between a group of interested clinicians and pathologists. Although acute childhood hemiplegia is rare, it is responsible for a substantial number of those cases of cerebral palsy where the lesion is acquired subsequent to the neonatal period and has the added interest of possible prevention or relief by early treatment. The report opens strongly with a lucid scheme for terminology and classification, well adapted to the diversity of clinical picture and aetiology (this latter unknown in more than half the cases). In brief, while infants or older children commonly develop hemiparesis after fits, in a small proportion the patient is often comatose and paralysis profound so that something more than Todd's palsy is suspected. If weakness persists longer than a week it is likely that more than three-quarters of the children surviving will have a permanent hemiparesis, two-thirds of these have epilepsy and about three-quarters will be below average intelligence.

Brandt's historical review of the aetiology emphasises the limitation of prophylaxis, for apart from the proper care and treatment of meningitis, otitis media and head-injury little can be done to anticipate and prevent the occurence of hemiplegia. In the acute phase the most urgent measure is to stop the repeated convulsions as soon as possible. The smaller the child the more important a knowledge of adequate safe dosage and the group agree that I.M. paraldehyde, a favourite remedy, is suitable in doses of 0.1 ml per lb. body-weight. When hemiplegia is established little is feasible beyond early carotid angiography for the rare patient in whom the clinical signs suggest the possibility of thromboendarterectomy. The use of hypothermia to reduce tissue damage in ischaemic areas finds theoretical favour while anticoagulant therapy has little to offer since clinical diagnosis of thrombotic accidents is so fallible and embolism rare in childhood.

It may seem curious that handicapped intelligence is a major stigma of this condition, especially when it is not especially associated with subsequent epilepsy. Clinical analysis by the discussants showed that retardation is commoner with diffuse lesions like encephalitis or lead-poisoning (presumably lateralisation simply indicates a point of lessened resistance in a widespread cerebral disorder), and findings such as optic neuritis, air or electro-encephalographic abnormalities may involve what seems to be the inappropriate hemisphere; indeed the preceding convulsions are sometimes bilateral. It is not known how often acute hemiplegia supervenes on pre-existing neurological damage, so that much information on its natural history is likely to be gleaned by prospective surveys from nursery days either of an adequate random sample or an "at risk" group with paired controls. Only one-third of congenital hemiplegias are remarked by parents in the first six months of life and many affected infants are asymptomatic at age of one year.

The value of the seminar is enhanced by the expedient of prior circulation of the papers to be presented. This has resulted in nice dovetailing of the original papers and the subsequent discussions are models of brevity in giving little that is not germane to a concise appraisal of gaps in our knowledge together with a comprehensive forward look to future steps for better understanding and treatment of the abnormalities encountered.

N. J. O'DOHERTY.

SPORT

BLUES

At a meeting of the Blues Committee held on 15th January, 1963, the following awards were made :—

Athletics

P. K. Peace	*Full Blue*
R. Morris	*Half Blue*
M. Ribeiro	*Half Blue*
A. Winskill	*Half Blue*
J. N. C. Hunt	*Half Blue*

Cricket

N. J. Knott	*Full Blue*
M. Walters	*Half Blue*
G. Hambleton	*Half Blue*
I. Reekie	*Half Blue*

Shooting

P. Jordan	*Full Blue*
D. Glynn	*Half Blue*

Cross Country

M. Hutchinson	*Full Blue*
D. Cooper	*Half Blue*
V. Holt	*Half Blue*
A. J. Lakin	*Half Blue*

Fencing

C. Durant	*Half Blue*
J. J. Cressall	*Half Blue*
R. Knight	*Half Blue*

Sailing

P. A. Mitchell	*Half Blue*
J. R. C. Sharp	*Half Blue*

LADIES CLUBS

Fencing

E. A. Ward	*Half Blue*

Hockey

H. Barnes	*Half Blue*

Squash

J. Gardner	*Half Blue*

RUGBY

After eight weeks without a game, the fifteen took the field at Aberavon with not unreasonable apprehension. The pitch was surprisingly dry and the home side had its customary sprinkling of internationals and trialists. Early misgivings were soon dismissed, when it became apparent that the pack was holding its own, with P. Peace and A. Kingdon dominating the lines-out. The half-backs, N. Boyd and D. Bevan wisely used the touchline to move the Hospital into attacking positions. Ironically, mistakes made in initiating attacking moves amongst the backs led to early goals by the opposition. At half-time, the Hospital found themselves surprisingly less exhausted than had been predicted, having won a large share of the ball, yet fifteen points down. In the second half, single defensive mistakes again gave Aberavon their opportunities and more points were recorded. Thus, at 'no-side' the Hospital were defeated by four goals and two tries to nil, in a game in which the fifteen were not outpaced and during which the pack had at times distinguished itself. D. Hendrick, making his 1st XV debut at No. 8, had a sound game.

With an improvement in the conditions of grounds, ball practice will eliminate some mistakes, but others will be removed only by individual thought and application during the game. A similar performance by the pack and more decisive running by the three-quarters should bring a better result at Exeter.

The other fifteens, not favoured by the warmer western climate, found their matches again cancelled. Similarly, the Hockey and Football clubs were without games.

SQUASH

Following an indifferent start to the season, the Squash Club has recently found winning form. In the Cumberland Cup Competition victories have been recorded against the Bank of England, I.C.I. and Lensbury, the first two successes avenging defeats earlier in the season. The Club, which once held a lowly position in the Third Division of this Competition now challenges for promotion. D. J. H. Richmond, C. Chantler and W. A. Norman have represented the Hospital in all three games and have set a high standard of performance.

In two other matches played to date, the Hospital met stiff opposition in the Cambridge University Ganders, the University's 2nd V, losing four matches to one, but beat a St. Mary's V by three matches to two.

The changed fortunes of the squash five augurs well for the Inter-Hospitals' Cup Competition, in which they meet St. Thomas's in the semi-finals.

FENCING

The record of the Fencing club has been less variable. Of seven inter-college contests held so far, seven over-all victories have been achieved. Recently Imperial College were defeated in foil and sabre competitions; Middlesex Hospital were well beaten in a foils match; and Queen Mary's College were beaten in the sabre competition and in the final tally, although the foils match was lost. C. Durant has twice won all his bouts in the foils matches and R. Knight has repeated this feat in sabre competitions.

The Ladies Fencing team took part in the foils match against The Middlesex Hospital and won their competition. Elizabeth Ward was undefeated in all her bouts.

SWIMMING

The Club defeated Lloyds S.C. by five goals to one in a water-polo match and with more accurate shooting could have further increased their score. D. Barnes and K. McGlynn both scored two goals and J. Bartlett added the fifth.

Reports and Results

RUGBY

Guy's v. Aberavon

At Aberavon 16th February, 1963

Result—Lost 0-26

There were two outstanding features of pre-match importance.

Guy's last fixture was played on December 15th, but at last the weather has been overcome, and the match took place on a soft, but rather wet pitch. Secondly, the team showed important changes in an attempt to strengthen the back row, a constant weakness this season. Baker returned to the side at open side wing forward after an unfortunate absence, his last game being in September, 1961. A newcomer to the side, D. Hendricks, appeared at No. 8.

Once again Aberavon proved formidable opposition, this time including only four of their supply of internationals !

The first half was an interesting contest. The young Aberavon backs were known to be fast and dangerous in attack if supplied with the ball, but the Guy's pack fought for every set piece. Price hooked cleanly, taking important strikes against the head, although the opposition were using a small hooker, supported by two strong props, who swung and "crouched" at will. Unfortunately, the referee, too, allowed him this concession. Twice he was penalised in this half, but Edgar's difficult attempts at goal were short.

Peace and Kingdon's domination of the catching at the lines out was often wasted by poor distribution. The back row started well, Baker tackling often, Hendricks covering deep for the numerous overhead kicks. The three-quarters defended as a line.

Aberavon launched many attacks from loose play. Two such attacks led to tries. Firstly, Guy's attacked strongly following a run by Biggs and Egwuatu, but a dropped pass in the Aberavon 25, was dribbled the length of the field for a try. Two further mistakes by Guy's were snapped up and carried over. All three tries were converted.

Thus, at half-time, a fifteen point lead had been established, following a half when Guy's showed no signs of being outclassed.

The second half followed a different pattern. Guy's pack continued to hold their own in the tight, but loose play and tackling deteriorated.

O'Connor, the British Lion, began to dominate the game with brilliant attacking moves, bringing his three-quarters into play. These were supported by fast backing up by a mobile pack. A goal and two tries resulted, mostly stemming from exciting play.

Unfortunaely, Guy's did not follow this example, concentrating on the touchline and the diagonal punt, which failed to bring results. On the whole, this was a poor performance by the Hospital team against an extremely powerful unit.

The forwards deserve full praise. Price seems to be following Treadwell's fine example of previous season's. The push was strong, but Peace tended to pack higher than Kingdon.

The line out play was good, but at the oppositions throw in a gap appeared at the 7-8 position in the line. This must be rectified, as O'Connor exploited it continually.

Bevan and Boyd combined well, but failed to set the line in motion. Natural runners in the line must receive more passes. In attacking territory, Boyd was lying back, with his centres

up. Thus, kicking was the only method of attack.

In defence all the backs showed courage, but missed far too many important tackles. Myall fielded and cleared well.

Thus, a sound defeat on paper but an enjoyable game after a nine week interruption of the season.

Team : R Myall; R. Kerner, A. Edgar, D. Biggs, E. Egwuatu; N. F. Boyd, D. Bevan; J. E. Davies, E. Price, A. Fisher; P. Peace, A. Kingdon; D. R. A. Lloyd-Edwards (capt.), D. Hendricks, A. Baker.

ROGER BROWN.

SQUASH

Cumberland Cup Match v. I.C.I., played on Tuesday, 12th February at Guy's.

Result—Won 4-1

D. J. H. Richmond beat C. G. F. Harding 4/9, 9/6, 10/8, 9/7.
G. H. Davies lost to R. G. Clark 9/4, 9/6, 3/9, 5/9, 9/10
P. F. Sievers beat J. S. Eaton 9/6, 9/4, 9/3
C. Chantler beat R. C. Hampel, 9/0, 9/2, 9/7
W. A. Norman beat D. S. I. Anderson. 9/2, 9/7, 9/7

Cumberland Cup Match v. Lensbury S.R.C. played at Shell Centre on Tuesday, 5th February

Result—Won 4-1

D. J. H. Richmond beat T. Aitchison, 9/2, 9/3, 9/3
P. F. Sievers beat L. Priestley, 9/3, 9/4, 9/5
C. Chantler beat D. R. Thomas, 9/6, 9/4, 9/1
W. A. Norman lost to N. D. Brigstock, 9/3, 3/9, 5/9,7/9
J. W. Norman beat T. Berryman, 9/3, 9/5, 9/3

v. Cambridge University Ganders, at Cambridge, on Saturday, 26th January, 1963

Result—Lost 4-1

D. J. H. Richmond lost to J. Newman, 1/3
P. F. Sievers lost to J. Caplan, 2/3
C. Chantler lost to P. Mawson, 0/3
W. A. Norman beat D. Marshall, 3/2
T. A. M. Stoker lost to J. Waterfall, 0/3

v. St. Mary's Hospital, at Guy's, on Thursday, 14th February, 1963

Result—Won 3-2

D. J. H. Richmond beat J. Carlton, 3/0
M. J. Elliott lost to N. Allen, 1/3
T. Huins lost to A. Price, 2/3
J. W. Norman beat C. Ellis, 3/0.
J. Marguerison beat B. Henderson, 3/0

FENCING

25th January, 1963, v. Imperial College

Results: Foil—won 6-3
Durant won all his bouts
Sabre—won 9-0
Over-all result—won 15-3

Teams: Foil—E. H. Hartley (capt.), C. Durant, R. Jones
Sabre—E. H. Hartley, R. Knight, B. Hartley

31st January, 1963, v. Middlesex Hospital

Results: Mens foil—won 10-2
Harley, Knight and Durant
Harley, Knight and Durant won all their bouts
Ladies foil—won 4-2
E. Ward won all her bouts

Teams: Mens foil—E. H. Harley (capt.), R. Knight, C. Durant, R. Jones
Ladies foil—E. Ward (capt.), C. Jones E. Belcher

7th February, 1963, v. Queen Mary's College

Result: Foil—lost 4-5
Sabre—won 6-3
R. Knight won all her bouts.
Overall result—won 10-8

Teams: *Foil*—R. Knight, C. Durant, D. Purdell-Lewis
Sabre—C. Durant, R. Knight, B. Hartley

SWIMMING

Water Polo v. Lloyds S.C.

Result: won 5-1

Team: D. Barnes (capt.), K. McGuyan, J. Bartlett, A. Forbes, J. Pete, P. Malpass, J. Valentine

HOSPITAL INFORMATION

APPOINTMENTS VACANT

Applications are invited for a full-time **Research Fellowship in the Thoracic Surgical Unit** for research on Cardiovascular problems. It is desirable that applicants should possess a higher qualification in Surgery. Initial salary normally within the range £1,250 to £1,400 per annum, according to the experience and qualifications of the person appointed, but in special circumstances a higher initial salary would be considered. Applications, with the names of three referees, should be sent to the Dean, Guy's Hospital Medical School, London Bridge, S.E.1.

Required in the Staff Dental Service, a **Dental Surgery Assistant to the Dental Surgeon in charge.** The appointment will commence on 1st April, 1963, and the successful candidate will be required to have had experience in running a National Health Service practice, and dealing with patients. A State Registered Nurse would be ideal. Further particulars may be obtained from Mr. D. R. Whittington, Staff Dental Officer, Guy's Hospital. Application forms should be obtained from the Superintendent, Guy's Hospital, London, S.E.1, and should be returned to him not later than **16th March, 1963.**

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P C. H. Newbold B. M. J. Wolfe
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Medicine

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J. W. Ogilvie

Midwifery

P. C. H. Newbold B. M. J. Wolfe
J. W. Ogilvie J. Alaghband Zadeh

PAPERS BY GUY'S MEN

In order to make this list as complete as possible, Guy's men whose papers have not been noted in this column are asked to send the Editor details of their publication.

Aaron, Margaret W. and Grant, E. H. Dielectric relaxation of glycine in water. *Trans. Farad. Soc.*, 1963, **59**, 85.

Buckle, A. E. R. Sigmoid volvulus associated with torsion of an ovarian cyst. *Brit. J. Surg.*, 1963, **50**, 449.

Forrest, J. O. Clinical assessment of three desensitising toothpastes containing formalin. *Brit. dent. J.*, 1963, **114**, 103.

Grant, E. H. Electrical behaviour of egg albumin solutions at ultra high frequencies. *Nature*, 1962, **196**, 1194.

Kay, Lester W. Swellings of the palate—a differential diagnosis. *J. dent. Ass. S. Afr.*, 1963, **18**, 7.

Lorber, John and others. Controlled trial of immediate and delayed closure of spina bifida cystica. *Arch. Dis. Childh.*, 1963, **38**, 18.

Luder, J. and another. *Salmonella* meningitis in the newborn. *Postgrad. med. J.*, 1963, **39**, 100.

Macdonald, I. and others. Liver, depot and serum lipids during early recovery from kwashiorkor. *Clin. Sci.*, 1963, **24**, 1.

Norman, D. H. Preliminary appraisal of an air-bearing handpiece. *Brit. dent. J.*, 1963, **114**, 90.

Stevenson, F. H. and another. Tuberculosis of the spine treated conservatively with chemotherapy. *Tubercle*, 1962, **43**, 408.

Whitmore, D. N. and another. *Pasteurella septica* meningitis with survival. *Postgrad. med. J.*, 1963, **39**, 98.

PERSONAL

Special rates for Guy's Staff, Students, Nurses, and Subscribers to the Gazette. 5 words 10s. 6d. 15 words 21s. 0d. Box Numbers 1s. extra.

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M. C. Shannon, M.B., B.S., Sandling House, Hollesley, Nr. Woodbridge, Suffolk. Tel. Shottisham 214.

A. W. R. Williamson, F.R.C.S., 1, Carlton Lodge, Carlton Road, Tunbridge Wells, Kent. Tel. Tunbridge Wells 30509.

BIRTHS

GREENWOOD.—On 18th December, 1962, at Cheltenham Maternity Hospital, to Annette (née Hasquencort, B.D.S.), and Roger S. Greenwood, M.B., B.S., a son, William David.

SAGORIN.—On 21st January, 1963, at Parklands, Durban, South Africa, to Pauline and Leonard Sagorin, a daughter (Joanne Dinah), sister to Sessel, Richard, and Michael.

MARRIAGES

BLAKE-HUGHES.—On 26th January, 1963, at Chelsfield, Kent, Surgeon Lieutenant (D) Marcus W. Blake, L.D.S., R.C.S., R.N., to Monica (Lisa) Hughes, S.R.N.

TIPTON-SHEWAN.—On 6th February, 1963, at Trinity Presbyterian Church, Bromley, Kent. Jennifer Smith Shewan, M.B., B.S., to Richard Henson Tipton, M.B., B.S.

DEATHS

BEKKER.—Recently in South Africa, Frans Wepener Bekker, F.R.C.S., of Heerensradit, Cape Town.

EDITORS W. G. REEVES
S. M. WOOD

GUY'S HOSPITAL GAZETTE

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PASSIM

Medical Education

'To live is to change,

And to be perfect is to have changed often.'

Newman.

The novice entering upon his medical career may understandably entertain an image of his teaching hospital as a wise and august establishment, honoured by time and permeated with humanitarian motives and altruistic ideals. As he enters, he is prepared for a radical change in his environment and stern demands on his capabilities. The foundation and functions of this social giant are accepted without question. But as the student gains confidence he may choose to stand back and dissect the system of which he is now a part, and in doing this he will be no exception.

Many have criticised the present teaching curriculum at Guy's, but it will always be a compromise for many reasons. The eager critic should remember that the teaching commitments of a hospital such as ours have to be carried out with due regard for the primary purpose of the hospital, *i.e.*, the care of the sick. It is not difficult for this fact to be temporarily forgotten in the search for bizarre physical signs and absorbing syndromes.

However, changes have recently been taking place at Guy's, and in this issue we publish an article by the Medical Sub-Dean about some of the improvements which are gradually being incorporated into the clinical syllabus. These include the introduction of a combined pre-clinical class which covers the elements of both medicine and surgery, with the disappearance of the previous surgical ward-clerk appointment. Among the changes which have yet to take place is the provision for a greater variety of special appointments of which any one student may do two. This is undoubtedly an improvement and will make more efficient use of the specialist clinical material, although it is unfortunate that a student will not be able to do the special appointment in Pathology at a time better suited to his examinations.

With the pre-clinical course there is greater freedom for experimentation and improvement, for here patients are not directly affected

But the eternal mill-stone is the considerable shortage of staff in relation to the number of students. This of course is not peculiar to Guy's and reflects one of the major defects of our present system. The low staff-student ratio virtually forbids any attempt to organise a tutorial system whereby the student would experience a far greater degree of personal contact with his teachers in a more informal atmosphere, and would receive individual supervision for at least one hour every week. If this could be instituted it would save a significant amount of wasted effort on the part of the student who, especially in the morass of 2nd M.B., may easily founder because of the lack of contact with those who are his academic guardians. Also it would be much easier to encourage interest in certain subjects not immediately related to the present course, *e.g.*, History, particularly the history of medicine, Philosophy and Literature.

One of the most fundamental things which a student needs to know is "*How* to Learn" rather than "*What*", but the acquisition of such a valuable asset may be sacrificed for the parrot-wise repetition of mnemoncis in a desperate bid to survive the treacherous examinations ahead.

The criteria used for the selection of students and the design of the curriculum which is to educate them are very closely related. For to define the one, begs definition of the other. If a student is selected at a ratio of one out of ten applicants the school concerned has a responsibility to educate that person to become a competent doctor. If he subsequently finds that he cannot do this within the curriculum as it stands, then the correlation between the two has come adrift. Thus as one changes so must the other. As time progresses, those students arriving at Guy's are already more specialised in their education than ever before. Therefore it might be of very great value to introduce voluntary tuition on certain non-medical subjects; if only to give some balance to a very specialised course.

One of the more incongruous parts of our present system is the transition which takes place when a student goes onto the wards. The very different atmosphere demands a rapid acclimatisation, and many of the principles learned previously are forsaken as one picks up the " new language". A way of reducing this gap would be to provide more applied anatomy in association with some elementary pathology during the 2nd M.B. course, keeping the detailed pharmacology for the first few clinical months. As it is now, the general pathology course comes too early after 2nd M.B. for it to be of the greatest use to many, whereas if it were divided into a preliminary course involving some of the general principles during 2nd M.B. and a three-months' pathology appointment later on, at about half-way through the clinical period, it would almost certainly be greeted with a greater degree of enthusiasm. This is also related to the frustrating problem experienced by clinical students who find it impossible to attend all the many admirable courses of lectures. For it is often the case that the student ought to be in up to three places at once. Special pathology lectures are without doubt amongst the most valuable of those at Guy's, but many people are unable to attend because of other commitments, and a

pathology appointment at the suggested time would solve this problem.

However, in the end it is the individual who decides on his own version of the curriculum, and we record with interest these measures already under weigh to enable him to reap the most useful reward from his education at Guy's.

Disease Detection

Bermondsey and Southwark form the immediate environment of Guy's and while at one time anthrax and fish-handler's disease were among its characteristic afflictions it now seems that bronchitis and bronchial carcinoma have become unusually common in this area.

Many surveys have been made to study the geographical patterns of disease, but this work has almost invariably been achieved by studying patients who have presented with symptoms to their local hospital or general practitioner. Very little is known about the latent and untreated disease existing in a population, and it would be especially useful to know the distribution and incidence of it in the catchment area of a particular hospital.

A scheme is shortly to be launched by the Department of Experimental Medicine, with the aid of a grant from the King Edward Hospital Fund, to study the anatomy of disease in the surrounding area and to assess the need for medical care. A preliminary part of this work has already been completed in the form of a study of the Out-patient Department, involving 1,000 out-patients. 40-50% of the 12,000 patients admitted annually to beds at Guy's come via the Out-patient Department, and this study was made in order to find out why they came, who sent them and where they live.

The population survey on diabetes at Bedford has provided valuable experience in the detection and assessment of disease on a large scale and similar techniques will be used in this more general study.

Initially a detailed questionnaire related to personal health, with an explanatory letter, will be sent to the local inhabitants. A random sample of this quizzed population will later be asked to attend for a physical examination at Guy's. It is during this phase that the largest number of medical personnel will be required, and it is proposed to organise a 'production-line', staffed largely by student volunteers, in order to carry out a fairly complete clinical examination and investigation of each 'patient'. These examinations will take place during several evenings and week-ends and a meeting will be announced in the near future for all those who are interested to attend.

This scheme should result in a clear picture of the pattern of local disease; high-lighting particularly that which tends to remain asymptomatic and ignored by the patient. This will provide some very useful information to be taken into consideration when planning the new Out-Patient Department and in fact the whole structure and function of Guy's Hospital in the future.

GUY'S DIARY

MARCH

EXHIBITION *The Hip.*

12th	T	1.00	Mr. ECKHOFF. Clinical Lecture. *Deformities of the Hand.*
15th	F	2.15	Combined Round. Dr. MACLEAN and Department of Paediatrics.
18th	M	1.00	Dr. HUTTON. Clinical Lecture. *Anaesthesia for Open Heart Surgery.*
19th	T	1.00	Dr. MANN. Clinical Lecture. *Pneumonia and Empyema.*
21st	Th	1.00	Dr. HILLS. Clinical Lecture. *Specialising in Diagnostic Radiology.*
		5.00	Neurosurgical Round. Mr. PETER SCHURR will present two neurosurgical cases. Clinical Theatre.
22nd	F	1.00	Dr. MACLEAN. Clinical Lecture.
		2.15	Combined Round. Professor BUTTERFIELD and Dr. BISHOP.
23rd	S	10.0	Clinico-Pathological Meeting. Clinical Theatre.
25th	M	1.00	Dr. BAKER. Clinical Lecture.

We offer our congratulations to Mr. I. J. MacQueen on his appointment as Consultant Orthopaedic Surgeon to the Croydon Group of Hospitals.

Mr. Gilbert J. Parfitt has been appointed head of the department of Oral Medicine in the new Faculty of Dentistry at the University of British Columbia. Since 1955 Mr. Parfitt has been Professor of Dentistry at the University of Alabama, before which he was on the staff at Guy's and at the Eastman Dental Hospital.

OBITUARY

F. W. BEKKER

Guy's men of the 1920's will be sad to hear of the death in South Africa, a month or two ago of Franz Bekker.

He came to Guy's to study medicine with the influx of students from South Africa just after the end of the first world war.

He will be chiefly remembered for his prowess in the Rugby field. He was the Guy's scrum half in all the victorious post war XV's and with his partner J. G. van Schalkwyk became one of the best pair of halves in the country. They were chosen to play in the final English trial against the famous Services pair Davies and Kershaw. He did not, however, allow his Rugby to interfere with his work and after qualifying in 1922 he did many House Appointments including House Surgeon and E.N.T. House Surgeon. He did further surgical appointments at Lambeth and elsewhere before returning to South Africa where he practiced as an E.N.T. surgeon in Port Elizabeth. He returned to England for post-graduate study in 1938 and took the F.R.C.S.(Ed.). On his return to South Africa he practiced in Cape Town until his retirement a year or two ago. He was twice married and our sincerest sympathies go to his wife and family.

THE NEW CLINICAL CURRICULUM

by Dr. J. C. HOUSTON

In considering the clinical curriculum it has to be remembered that owing to the timing of University examinations students enter the clinical period of study in two approximately equal batches in April and October, and that the required period of clinical study is 3 months longer for London University students than for those from Oxford and Cambridge. There were two main criticisms of the old curriculum. Firstly, after completing the compulsory appointments Oxford and Cambridge students had no time to take any of the special appointments and London students could devote only one 3-month period to them; a great deal of clinical material and excellent teaching was, therefore, not fully utilised. That so many students were precluded from taking such valuable appointments as those in Genito-Urinary surgery and in Neurology was particularly unfortunate. Secondly, half of the students had to become surgical ward clerks before taking the introductory course in medicine.

In the new scheme of clinical appointments which started in April, 1962, and which is summarised below, it has been possible to ensure that all students take the genito-urinary appointment and the time spent on compulsory appointments has been reduced by 2 months. Thus, London students will have one period of 3 months and one period of 2 months, and Oxford and Cambridge students will have a period of 2 months, for elective appointments and these will be increased by the institution of new clerkships in pathology, experimental medicine, paediatrics and psychological medicine. It will be possible to take certain combinations of these appointments at the same time. To effect these changes 5 months have had to be saved from the time devoted to compulsory appointments under the old scheme: the second obstetric dresser appointment has been reduced from 3 months to 1 month, the clerkship in the children's department from 3 months to 2 months, and for the 6 months previously occupied by the preclinical class and surgical ward-clerk has been substituted the new first clinical appointment which lasts for 4 months. The last change also ensures that all students have an introductory course in medicine and surgery before becoming ward-clerks or dressers.

It is much easier to add to the medical curriculum than to reduce it and thanks are due to those members of the clinical staff, the surgeons, obstetric surgeons and the paediatricians, who have been willing to accept a shorter allocation of the students' time. The changes inevitably involve some loss, but it is hoped the general effect will be to make better use of available teaching resources. An introductory course in surgery, though it has certain advantages, cannot adequately replace the old surgical ward-clerk appointment, but this disadvantage should be offset by the new compulsory Genito-Urinary appointment and by the increased opportunity for students to become dressers in the thoracic surgery department. The new elective appointment in paediatrics may compensate partly for the

shorter time students spend compulsorily in the children's department.

Finally, it will be clear that all students who entered the wards before April, 1962, will complete their clinical training under the old scheme of appointments.

CLINICAL APPOINTMENTS UNDER THE NEW CURRICULUM

	Group I	*Group II*
1st Period 4 months	First Clinical Appointment	First Clinical Appointment
2nd Period 3 months	Medical Ward Clerk (1st Three Months)	Junior Dresser
3rd Period 3 months	Junior Dresser	Medical Ward Clerk (1st Three Months)
4th Period 3 Months	Eyes, Skins, Anaesthetics and Fevers	Ear, Nose and Throat and Psychological Medicine
5th Period 3 months	Obstetric Dresser, Extern and V.D.'s	Eyes, Skins, Anaesthetics and Fevers
6th Period 3 months	Children—2 months Regional Hospital Obstetrics—1 month	Obstetric Dresser, Extern and V.D.'s.
7th Period 3 months	Ear, Nose and Throat and Psychological Medicine	Children—2 months Regional Hospital Obstetrics—1 month
8th Period 3 months	Medical Ward Clerk (2nd Three Months)	Genito-Urinary, Fractures and Orthopaedics
9th Period 3 months	Genito-Urinary, Fractures and Orthopaedics	Medical Ward Clerks (2nd Three Months)
10th Period 3 months	Senior Dresser	Special Appointments (Selected from List in Group I)
11th Period 3 months	Special Appointments : Clerk in Neurology Diseases of the Lungs Thoracic Surgery Paediatrics	Senior Dresser
12th Period 2 months	Pathology Experimental Medicine Endocrinology Diabetic Clinic Physical Medicine Psychological Medicine	Special Appointments (Selected from List)

THE RESIDENTS' PLAY, 1963

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or

"The Twilight of the Gods"

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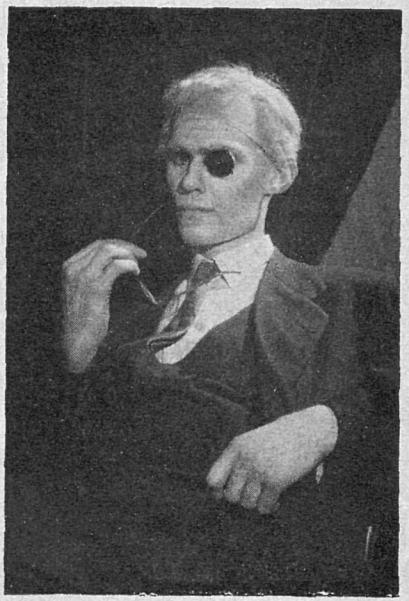


photographs by Simon Wood

Once again that amazing annual phenomenon, the Residents' Play, has come and gone and it is your reviewer's first and happy task to tell the many Residents' Play fans all over the world exactly how it went this year.

The preparation for the play start months beforehand, perhaps even in the summer, and at first gradually, then with increasing tempo, and finally with the frenzy of desperation, the script, the lyrics, the music and the actors are assembled and co-ordinated in the nick of time for our entertainment. The audience consists of those who know they are in it, those who know they are not, and those who might be; and whilst we have all come in the mood for enjoyment, we are a pretty exacting and critical audience. Some have seen fifteen or twenty Residents' Plays and are tempted to make comparisons with all the most memorable parts of all twenty. Most of us want the play to be the same as usual, only different and better with more songs and tunes than ever, but not longer, and having a plot that is entirely original and yet in traditional style; and when one recalls that the consultants have in recent years been in a rocket to the moon, in a ship, in a submarine and to the island of Cos, it is clear that each author has an even harder task than the last.

We arrived punctually at eight after a hurried meal and took our seats. The bass and drummer were already installed in their precarious eyrie above the pianos and about 8.20 Dick Spurrell (M.R.C.P.) and Malcolm Williams took their seats at the pianos, played the

National Anthem and began an elegant overture—highly suggestive of Twilight and the Gods.

Then the curtain went up to reveal a splendid rollicking opening scene at a Residents' Party in which four nurses were dancing with four vigorous house officers and singing the opening chorus "Oh You're Lucky to be at Guy's".

Chorus : *Oh, your lucky to be at Guy's*
Your appointment is quite a prize
Oh, it's heaven before your eyes, now you've
Got a job at Guy's
It's the mother figure—what can you do ?
But if Mother gets much bigger there'll
be room enough for you
In G-U-Y-S
Good old Guy's
That's the place where I belong.

Sister Claws : *Oh, how lucky you are to be*
In the theatres where you can see
It's the Soul of Efficiency, and a
Calm pervades it all, we
Never have a crisis and
Everything's oiled
We even threw the nurses out
If noticeably soiled
In G-U-Y-S
Good old Guy's
That's the place where I belong

Rubin and Drippensuck : *When my darling and I can pause*
In the preproom behind the doors
She is collared by Sister Claws,
And is made to scrub the floors.
I'm the Daddy figure
And I am the Mum
But although we're pretty basic
We had sense enough to come
To G-U-Y-S
Good old Guy's
That's the place where we belong.

The nurses were of the usual handsome beefy types seen on such occasions; two had silvery white hair done in the modern unkempt style, and all had gaudy old-fashioned underwear which was occasionally seen during the high kicks of the dance. I wonder if these huge uniforms can be supplied from stock or have to be specially made.

Soon Dr. Billy Rubin the hero and nurse Drippensuck the heroine withdrew to partake of sherry and crisps in private, and deplore the college accommodation, the empty beds in the Hospital and the critical lack of patients—though nurse Drippensuck thought that the numbers of patients suffering from treatment alone would suffice to keep the wards full, and anyway the fewer the patients the more time she and Billy Rubin could spend together. They were interrupted by the college porter testing Rubin's bleep at 2.0 a.m. The porter was a big man with a beard who was not at all keen on answering the telephone and it later transpired that he was Lord Bumliffe changed into a porter by a devilish machine. Puzzled by the phone ringing at 2 a.m. he considers the only likely callers are Dr. McArdle (very late) and Dr. Stripsem and Professor Hunt (very early).

In Scene two we see the beginnings of a conspiracy between Stripsem and Baffle-Dark. Trade is slack in the P.M. room and in the York Clinic, and Stripsem has plans to return (B-D bridles) to clinical medicine by eliminating the competition of his colleagues. Stripsem is a man of neat build and appearance who speaks and sings with the precise accent and idiom which are so well known.

STRIPSEM'S SAGA

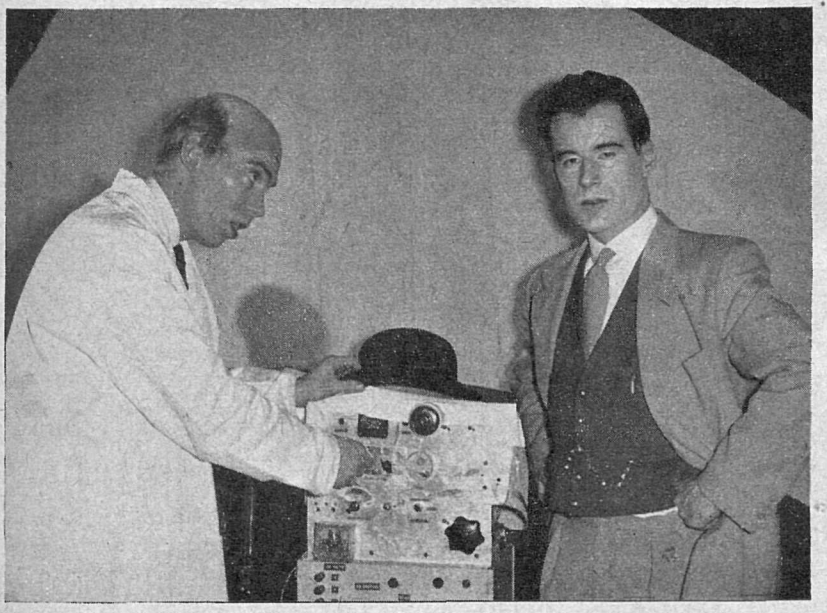
Time was, when I was keen and in my prime
Investigators used to find it hard
To get me off the scene of any crime
I loved to live at lively Scotland Yard.

At trials I gave evidence in full
The police were grateful. But I think by far
The smartest thing I ever did at all
Was have my own initials on my car.

It wasn't very long before my voice
Was known to every Justice in the land
Minority pathologists, by choice,
Were never really welcomed on the stand.

This happy state was never meant to stay
Pathologists, abetted by the crooks got
Butterworths to make my knowledge pay
They keep me very busy writing books.

No more my placid face adorns the court
Additions to my filthy slides have stopped. I've
Invested quite a different kind of sport
Forensic work, ex gratia, I've dropped.



Baffle-Dark's identity is revealed not so much by his appearance as by a scarlet waistcoat and a bright blue tie and by an interest in films, broadcasting and other psychiatric matters.

Stripsem has converted an old autoanalyser into a Time Machine which is to change the minds of his colleagues into those of physicians of a former epoch, and so make them ineffectual: for instance he says B-D's mind could be transported away and replaced with that of Mesmer, without any change in his appearance. Stripsem doubts if anyone would notice the difference.

They take away the Time Machine chair and go to read up Joiner's new short textbook of medicine, of which they have acquired a free autographed copy.

This plot is overheard by Buttercup and his H.P. Billy Rubin who are hidden behind a pillar.

Scene three is essentially a small sub-committee convened to appoint a new Professor of Medicine. The principal members of the sub-committee are Dr. Bo and Dr. Flauntze. They discuss the three applicants—Dr. Shamm, Professor Buttercup and Mr. Slackoff in the face of irrelevant interruptions by Dr. Mutton, who has had a dreadful day giving anaesthetics culminating in the insult of adding a gnome with an ingrowing toe-nail to the end of the list, which finally beat him to his knees. Knowing that Dr. Shamm has to get away to the Palace, Flauntze has filled Bo's bowler hat with bus tickets and proposes to choose the Professor by taking one of these from the hat. The first piece he picks up proves to be a strip about a yard long which he reads as an E.C.G. in great technical detail and deduces—"probably the driver's ticket not the conductor's." The next piece says that the first candidate to enter wearing a striped shirt, a red tie and wing cuffs on his coat is the first Professor of Medicine. The door is opened and the candidates sprawl in and sit down at the table as if they were members of the committee. Buttercup is soon found to fit the description and is appointed to the chair. A benevolent, smiling Breakbone enters wearing a royal blue suit, the group is complete and they sing a song. Mutton explains that the reason for the two lines missing in his verse is that he is a *part-time* consultant.

THE COMMITTEE SONG

All :

We sit on all committees, we comprise
the upper crust
We like administration but decisions are
our goal.
Their contents not important but admin-
istration must
Leave us very very very very very *in control.*

Flauntze :

In the winter, no committees I succumb
to Kenya's call
Appearance-wise I seem to have a smallish
part to play
But I'm really there in spirit, better part
than not at all.
And with what goes on I'm very very very
much au fait.

Bo : *I benefit a lot from my Algerian degree*
I haggle with the others till they weaken
and they drop
I make all the decisions but they never
know it's me
Who is very very very very very *much*
on top.

Mutton : *I'm rather fond of gassing and I do it*
every day
. . . . . .
It seems to me quite fun in a retiring sort
of way
. . . . . .

Slackoff and Breakbone : *I've had some parts annoying me removed*
by Mr. Wass
And I've been down at heel since in
Hawaii for the fall
By our pains all our committees made a
quite substantial loss
But now again we're very very very
on the ball.

Shamm : *When I came afflicted with Household's*
Sovereign chill
My safety, ever vital, made it prudent to
demand
Admission into Mary, where, despite my
feeling ill
I was very very very very very *in command.*

Buttercup : *I usually miss this sort of function, I'm a*
kind
of Women's Hour, French cricket with
marquees and sherry man
The Bentley dash to Bedford is much
better left behind
For I am very very very very *in the van.*

They turn to the second item of the agenda which concerns a startling decline in out-patient attendances from twenty-three thousand to nine hundred and thirty seven and a half (the half being one of Mr. Brain's patients) and it is concluded that by 1965 the Hospital will be empty, with the exception of Dr. McArdle's out-patients. Butters has discovered from the figures that three-quarters of the people attending his clinic are workers in the Department of Experimental Medicine. After various fruitless suggestions Bo reveals his master plan to isolate Guy's Hospital from the rest of London by means of a series of building schemes which make it more difficult for everyone, and particularly patients, to get in and out of the Hospital (this scheme has already been in operation at Guy's for some six months); and run the Hospital as a co-operative farm combining Bo's and Stamm's farms, Flauntze's piggery, Willie's apricots, peaches and figs and Cann's large garden in an organisation called the Guy's Economic Co-operative Union. What with the National Provincial Bank on one side of the new block, the Miller on the other, the new tower converted into a giant department store and the Hospital grounds filled with shops it should be a paying concern; and as Bo is on the

Building Committee, Finance Committee, Endowments Grant Sub-Committee, Clinical Research Committee, Clinical Co-ordinating Committee and Pre-clinical Co-ordinating Committee there will be little opposition from those bodies. While these details are being worked out Butters is forced into the Time Chair and to the sound of electronic music, crashing cymbals and flashing lights, he is filled with the ideas of Hippocrates and makes a short speech "Life is short, the art long, experience deceptive and judgement difficult" which is universally acclaimed and he drifts off with his disciples to the temple to assay the votive offerings. Before long the same fate befalls Flauntze who immediately afterwards pronounces (as Harvey might have done) that the heart may be regarded as a pump which drives the blood through the arteries into the veins from the left side into the right side, and that the blood moves round the body in a circle.

Left to himself Mutton sings a splendid song to an excellent tune revealing his philosophy of life :

MUTTON'S RECITATIVE AND ARIA

Recit :
What's this strange feeling
Of a sudden he knows not whether his blood is
Coming or going
His Q.R.S. complexes must be so intriguing
And his S - T segment so revealing

Aria :

As a boy of three I longed to be
A jolly rollicking tar
To ride the wave in a bark so brave
Yo-ho for the harbour bar
But life, you see, caught up with me
And plucked me from the mass,
And guided me from the watery sea
To the jolly old ether gas.

When I was eight I saw my fate
As a natural leader of men
I yearned to go and quell some foe
Or, at a pinch, some friend
But the natural fears of advancing years
Made it seem a whole lot easier
To conceal myself when danger nears
In a cloud of anaesthesia.

In the purity of maturity
Contentment is my lot.
In the world out there you're unaware
Of the inner world I've got ;
No earthling I to pine and sigh
The fate I found is kinder—
Turn the taps up high and away I'll fly
On an anaesthetic blinder.

He then sits in the chair wondering why he was not made Professor of Medicine. Suddenly to the accompaniment of the usual electronic noises there is a blinding flash, the lights go on and Mutton has vanished.

There are some good words in the committee scene and a couple of splendid songs but the likenesses are rather disappointing: Dr. Bo is tall, gaunt and dishevelled, unlike his prototype. The physical resemblances are equally unconvincing in the case of Slackoff, Flauntze and Shamm and this is accentuated by the striking success of Buttercup, who admirably reproduces the appearance, twinkle, mannerism and charm of the original—and later sings the song of the evening to a difficult tune with outstanding skill. Perhaps one should not be too much influenced by physical appearance when the words, characters and mannerisms are well portrayed, but there is no doubt it is a help worthy of all the wiles of make-up.

As the curtain goes down at the close of Act One a small white sheet is lowered, which at first we mistook for a token safety curtain, but its real purpose was later revealed when a series of coloured photographs of the process of demolition of old Guy's House was shown before the commencement of Act Two. This record of the devastation that is actually going on every day at Guy's had a sobering effect on the audience who responded by nervous laughter; and it was, therefore, most opportune that Scene One, Act Two, featuring the recently restored historic operating theatre in St. Thomas' Street, was the funniest and best in the whole play. Shamm enters the theatre to find Keats sitting at a table studying a book. He remarks,

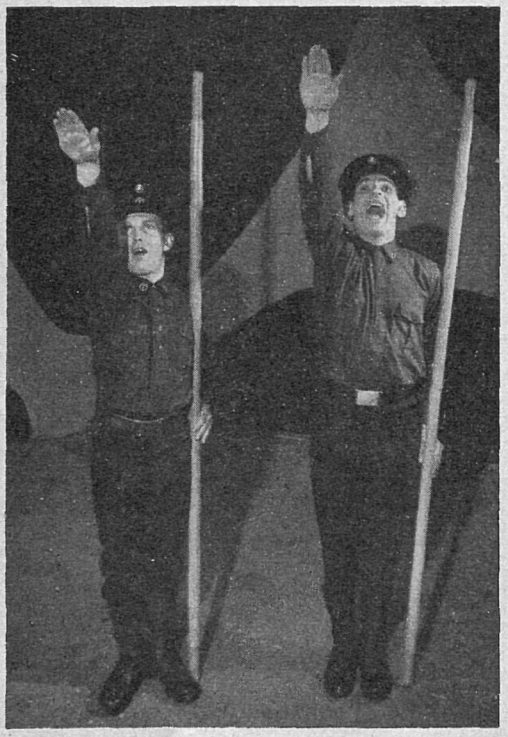
> "My heart aches and a drowsy numbness pains,
> My senses as though of hemlock I had drunk,
> Or emptied some dull opiate to the drains,
> One minute past, and Lethe-wards has sunk"

and wanders off.

Shamm seems to approve of this but considers the theatre archaic. He has been appointed the new anaesthetist since Mutton's dis-

appearance and he naturally decides to hide in the linen basket until the list starts.

Sister Claws and her staff start to prepare for an operation, having decided that as the new main theatres are at last sterile, no operations or surgeons should be allowed in them. Sister Claws is an exquisite and realistic sister who briskly handles everything including instruments, staff and golf clubs with Cheatle forceps, and organises "the girls" to prepare for an operation on Mr. Bird (a junior surgeon), who is wheeled in by two C.S.S.D. porters bearing a fanatical resemblance in their manner, dress and party salute to Nazi storm troopers. They sing a fierce and rousing patriotic song of the C.S.S.D. (partly in German) and retire in goose step.



C.S.S.D. MARCH

We are the C.S.S.D.
We stand for Guy's sterility
We are the C.S.S.S.D.
We are the least infected
From germs we are protected
Down in the C.S.S.S.D.
Esherichia, Salmonella,
Treponema and Shigella
Proteus too meets its Waterloo
Down in the C.S.S.D.

It's a most delightful labour
Hiding things in clean white paper
Though the labels don't provide
Any guide to
What's inside.

Bacitracin, polymyxin
And—Chlorhexidine
Thus does sister
Emulate Lister
Down in the C.S.S.D . . . . .

STER—ILE!

It soon becomes clear that Breakbone and Slackoff intend to operate on Bird with the help of Billy Rubin and nurse Drippensuck, and a good deal of amusing confusion goes on between a love scene of the house officer and his heroine, golf practice by Slackoff and a lot of entertaining dialogue. Bird is anaesthetised by Shamm, narrowly escapes having his two left legs cut off by Slackoff, has his head amputated by Breakbone and finally his stomach deftly removed and tossed from hand to hand round the theatre. The two surgeons sing a very good song mainly about their prowess and all their colleagues.

THE SURGEONS' SONG

Chorus :
Two jolly good surgeons are we
I think you must agree.
We carve towards posterity,
Or could it be prosperity ?
With cheques for veins and cheques for piles,
A surgeon's face is wreathed in smiles :
We operate in different styles
But jolly good surgeons are we.

Slackoff :
Life for me is one long graft,
My needle holder is my craft ;
I find I'm ever in a flap,
I never fail to close the gap.

Breakbone :
My unleashed anger scares them all
Down the examination hall,
But I can hold myself in check,
I've never circumcised the neck.

Slackoff :
Hedley says "I'm bound to say,
I always use my 'suture A.'
Of course I always gain my knowledge
from the Fellows at the College."

Breakbone :
Glover's really quite a ripper,
Out he pulls his three foot stripper.
Does your ulcer give you pain ?
Glover's work is not in vein.

Slackoff :
While sitting, watching television,
Your mind, no more, knows indecision.
Fear not a surgeon over zealous,
Your life is in the hand of Ellis.

Breakbone :
When I Wass going up the stair,
I met a man who Wass'nt there.
He Wass'nt there again today,
I wonder Wass his wife will say.

Slackoff :
Cancer of the lung has Brain
In the money once again.
Now advising for protection
Total pulmonary resection.

Breakbone :
Beard is eager young and fresh,
Slides his scapule through the flesh.
Staphs and Streps are such a tester ;
Why are all his beds in Esther ?

As the patient and entire theatre party leave for the recovery room, Baffle-Dark and Stripsem enter the theatre and gloat for a while over the growing success of their plot and sing a combined song.

THE SONG FOR PSYCHOPATHS

Chorus : Ad-Consultants as you see
Modern, hip, and with it. We
Love honour, adulation, fame
For cash is not our only aim.

Keith-Stripsem and Baffle-Dark *Weird erotic deviations*
Foul incestuous relations
Behold the Guy's custodians of vice
From my necrophilic perch
Super-voyeur in research
Like B - D, know that each man has his price.

Well-loved by every Judge
Skilled in making up the sludge
I wish B - D would leave the courts alone
I'm the darling, somewhat passé
Of the dumb illiterate mass. A
Genius, inheriting my own.

James Bond-like and cruel and slim. Age
Simply cannot fade the image
My P - R men broadcast on my behalf.
But he's angry now because
That was The Week That Was (that was) has
Found our even sick way to laugh.

By consorting with the dead
I earn my frugal daily bread
His technique's smooth, he cuts them very fine.
But I think I've met my master
For I always talk much faster
Ballistic-wise he shoots a pretty line.

University Professor
And mass medial confessor
We've each marked out our cosy little plot.
Now I cannot get the bullet
And I keep the clinic full, it
Alleviates our poor unhappy lot.

Scene Two is the market scene. Bo is running a very successful vegetable stall and Flauntze has a side of pork which he describes as "the first broad spectrum bacon with the antibiotic in the stripe". They are pleased with the medieval behaviour of their colleagues though they cannot understand it, and as they talk, Butters enters with his house physician who repeats after him the Hippocratic Oath: "I swear by Apollo—by the physicians and the General Medical Council—by the Clerk to the Governors and the Superintendent—by the Holy sanctity of the College to love honour and obey the ideals and intentions of the Guy's Economic Co-operative Unit". This said, he is appointed and garlanded as a fully fledged priest and proceeds to give a complicated summary (consisting almost entirely of abbreviations by initial letters) of a well-documented and fatal case of the Houston-Joiner-Trounce disease. At this point Shamm, Flauntze, Slackoff and Buttercup get together and perform a spirited country dance or jig; then retire exhausted. Bo leaves to ask the loan of Glover's Rolls to pull the combine harvester and Butters, discussing sugar beet, notes that the soil was much better at Bedford.

THE LAD OF RICHMOND GREEN

On Richmond Green there lives a lad
In Glorious Regency
No maid of honour ever had
More elegance than he
With sepia prints in sombre tints and
Priceless spode for tea
No crowns to resign to make it mine
That lucky lad is me.

That lucky lad is me, that lucky lad is me
My Bentley's fine, but for a Rolls I pine
That lucky lad is me.

I yearn for Cos, but Richmond's fine
A classic myth to build
No life of milk and honey mine
I am just butter-filled
I try to oil my life of toil
With sweet urbanity
Crowned heads defer when I aver—
The lucky lad is me.

The far-off lands are my backyard
The old world and the new
You'll find my outlook's avant-gard
And Pharaonic too
But my aplomb I get it from life's
University—
Though crowns may fade, I've got it made
That lucky lad is me.

The beauties of a foreign shore
Make Richmond all the finer
(Though after Bedford I'd adore
A survey out in China).
In my gestalt let's all exult
And tear off poetry
What crowns may lack, I've got it Jack
A lucky lad is me.

Shamm is troubled by the inadequate facilities for growing champagne grapes so he and Butters go off to the Guy's betting shop to have a flutter on the chariots.

At this point the news suddenly breaks that Guy's reputation has been enormously enhanced by the medieval practices of the physicians and they now have more private and hospital patients than ever, as well as a grant from the Nuffield Foundation to enlarge the Hospital and engage new staff at all levels. The future of the G.E.C.U. is threatened and as a desperate measure Flauntze goes off to burn the waiting lists while Rubin denounces Stripsem and Baffle-Dark.

The final scene opens with Stripsem and Baffle-Dark attempting to look after a patient in the Intensive Scare Unit. After ineffectually using a stethoscope upside down, they are forced to the diagnosis that the patient is probably suffering from intensive care, a condition

which only the robust can tolerate. Everybody gradually enters and tears a strip off Stripsem and he and Baffle-Dark are finally reduced to penitence by the threat of being removed to be sterilised in the C.S.S.D. The Time Machine is put into reverse, there is a blinding flash and Mutton re-appears in the dress and idiom of (probably) Œsculapius, and still smoking his pipe happily.

All is forgiven in a final glorious chorus, with the warning that any of this might actually happen and we must be all very careful where we sit down.

THE FINAL CHORUS

Have we given you the most colossal fright ?
Do be careful what you're sitting on tonight ;
But we feel we ought to say
It didn't really happen
But it might.

Watch for side effects from any honest chair
It's not pleasant in the present but beware
It's much worse to come back fast
From the dim and distant past
No it really didn't happen
But take care.

Was there something else you wanted us to hate ?
Just because you were not in it, was that fate ?
Just remember what you say
Could come out in next year's Play
Do you think it couldn't happen
Just you wait !

So the plot came to a pretty satisfactory conclusion for most of those involved in it. There were the usual ends left untied: nobody remembered to reprieve Bumliffe from the duties of the college porter; and Billy Rubin and his heroine never (at least in public) became engaged or sang the usual love song.

It was clear that all the actors had taken immense pains with great success to perfect their impersonations and their parts, but one will always remember as an outstanding performance that of Bob Sells as Professor John Buttercup, and if one could make a few suggestions for another year without seeming ungrateful, it would be to cut down the time spent on the musique concrète between the scenes, and to provide a little more of the very simple and extremely satisfying absurdities produced by having more nurses and consultants dressing up on the stage in ridiculous disguises; and a few old fashioned Borough patients. If we expect a lot, it is because the Residents' Play is such an established delight to so many members of the Hospital and their friends that we are all as greedily insatiable for still more and better fun as we are grateful to the author, the producer, the writers of music and lyrics and all the actors, stage hands and workers behind the scenes who did so much to provide us with a wonderful and very satisfying evening's entertainment.

REX LAWRIE.

THE CAST

(in order of appearance)

NURSES	*Nils Jensen, John Carruth, Mike Jacoby*
SISTER CLAWS	*David Lewsey*
H.P's and H.S's	*John Crossley, Chris Lucas, Nick Barwell*
NURSE DRIPPENSUCK	*Mike Bright*
Dr. BILLY RUBIN, H.O.	*Jimmy Knowles*
BUMLIFFE (College Porter)	*Terence English*
PROFESSOR KEITH STRIPSEM (a Pathologist)	*Bill Pryse-Phillips*
Dr. DAVID BAFFLE-DARK	*Alan Stokes*
PROFESSOR JOHN BUTTERCUP (an experimental Physician)	*Bob Sells*
Dr. Bo (The Dean)	*John Simpson*
Dr. RALPH FLAUNTZE (a Cardiologist)	*Bobby Gumpert*
Dr. MUTTON (The Anaesthetist)	*Chris Boothby*
Mr. NILS SLACKOFF (a Plastic Surgeon)	*Mike Pagliero*
Dr. WILLIE SHAMM (another Physician)	*Mike O'Brien*
Mr. GUY BREAKBONE (another Surgeon)	*Tim Northfield*
JOHN KEATS (Apothecary)	*Colin Forsyth*
C.S.S.D. officials	*Chris Lucas, Nick Barwell*

Stage Manager	FRANK SCHWEITZER
Stage designed and built by	NICHOLAS COHEN, ANDREW NICOLAIDES, RICHARD JACOBY
Property Master	PETER FIRTH
Wardrobe	MARCELLA CHAMBERLAIN, DAVID LINTOTT
Make-up	JIM WILLIS, JOHN HAYWOOD, ANITA BARLTROP
Sound	....LIONEL MARTIN
Electricians	MIKE SHIELDS, JOHN CROSSLEY
Business Manager	JOHN GUMPERT
House Manager	DAVID BELLAMY

Stage Hands : THE RESIDENTS

Pianos : DICK SPURRELL, MALCOLM WILLIAMS

Bass : JOHN POUND

Drums : JACK GIBBS

CRITICISM

By JEAN-PIERRE VOOS

Guy's Hospital Theatre Club

"Look Back In Anger"—by John Osborn

May 8th is Bastille Day in the theatre. But in 1956, ironically, the revolution which stormed the old bastions of Shaftesbury Avenue was initiated at the Royal Court with the First Night of Look Back In Anger.

Having read the script and seen the film, I approached my first encounter with the play doubting the wisdom of unearthing a seven-year old bombshell and quite prepared to be condescending about it. The Theatre Club's presentation gave me the rebuke I deserved though perhaps what it should have given me was a slap in the face.

By extolling the poetry of physical reality with this remarkable play, Osborn liberated us indeed—from the ethos of the "West-End". Alas that *they* should have since emasculated him with their accolade. But alas, too, that Look Back in Anger should ever be put over with anything less than consuming passion. For it is a play about just that; an heroic exercise in which the issues of love, sex and politics collide and blend through the agency of a tormented but articulate young man.

Not the first, but the most famous of all stage angries, Jimmy Porter then should be like a destructive element blasting away at some indistinct target, trying to shift layer after layer of cant and cynicism 'til he reaches that inner core where people either "feel" or are irretrievably "dead". Tim Davies certainly hit the mark where sincerity and sensitivity were concerned. His venomous tirades too made their impact on us, as they are designed to do, though if he had developed more of a twinkle in the eye while delivering the malice, its cutting edge would have penetrated deeper.

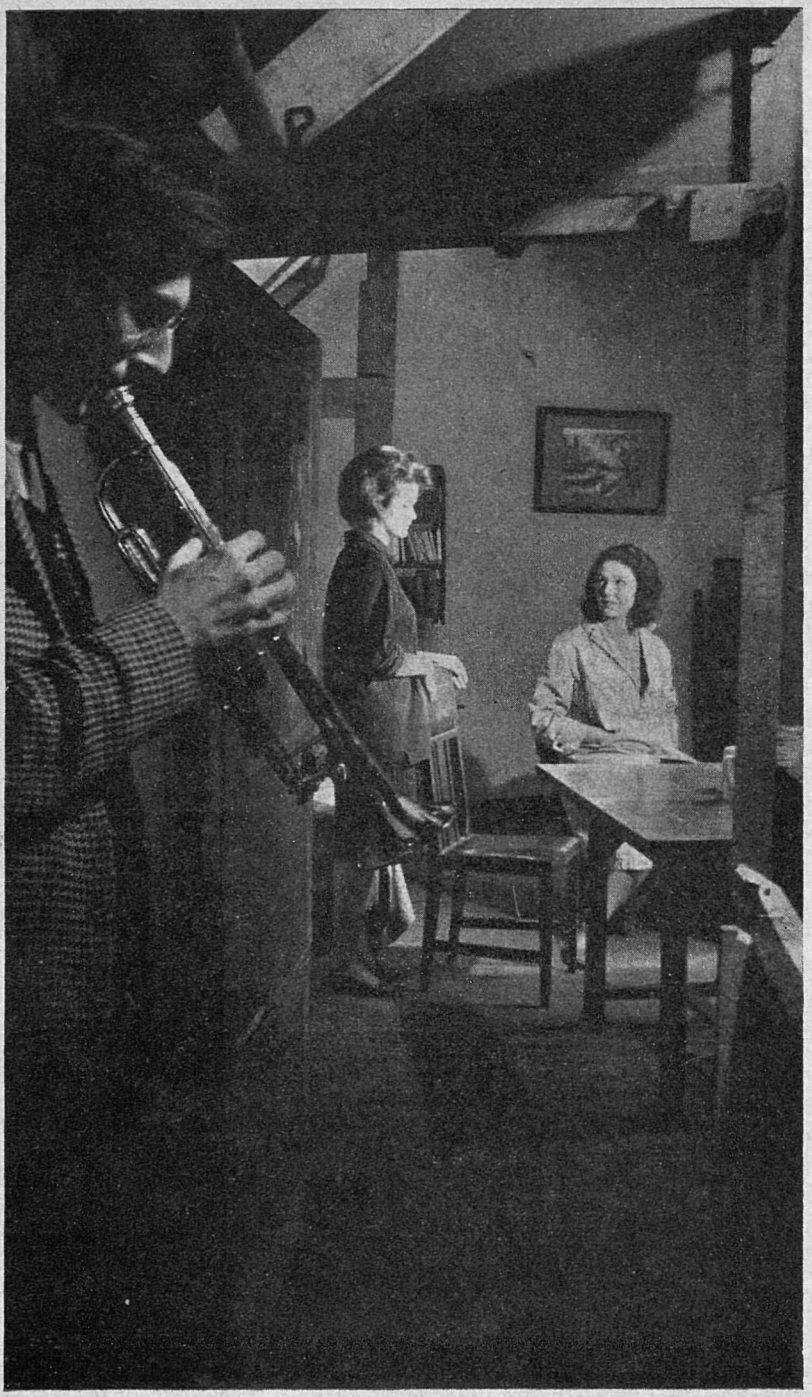
For the total effect of his onslaught on our senses, we should not rely on the actor alone. The bruises he inflicts on his victims in the play, notably on his wife Alison, must clearly be bared for our inspection. But also if she is too numbed by it all her numbness quickly translates itself into a numbness in the audience and we end up by observing the conflict without being sufficiently involved in it. There is here a difficult point of interpretation for the actress who presents the character of the wife. Of course, living with Jimmy for four years must have already left its mark on her and of course she puts up a show of long suffering, but suffer she must. Susan Franklin was, in this respect, rather too resigned so that she had not much room for conflict when her scheming friend Helena appeared on the scene. A love for Jimmy that is utterly submissive, adoring and expressed through calf-like eyes would well have served the actress and hence the play. Rather than *leave* him, she would have done better to *tear*

herself from him. As for the best friend from the enemy camp, Helena is a scheming minx. She has been fascinated by all the reports of the untamed beast and she has answered the call. Her purpose should be clear, and clear to both husband and wife though each is unable to escape. They should know that she is to make matters worse, and she does. Sally Larkin, struggling bravely against bronchitis during the run of the play, gave a performance that portrayed the class snobbery of the part but not enough of the second-rate actress that Helena is meant to be, nor of the ruthless, purposeful female.

Susan Franklin and Tim Davies as Alison and Jimmy Porter.

A most relaxed performance was given by Matthew Lewis as Jimmy's friend Cliff, in his difficult role of powerless referee. He provided just the right amount of opposition to Jimmy's cruelty, the right amount of husky shoulder for Alison to lean or cry on. A credible counterpoint of attraction was achieved whenever sparring occurred between the two young men. It was the older Colonel, however, who in his short appearance most managed to convince emotionally. For all the inadequacies of a younger actor moving about in an old part, for all that powder on the hair and about the ears is no substitute for age, David Graham gave us a most credible character. His lines were well away from caricature as one might expect from Osborn, but the actor avoided the trap of finding the easy way back to it. Instead, we were moved by the pathos of his Colonel Redfern.

The setting, by Paul Edwards, was a victory over seemingly insuperable odds, for although the audience was perched at a steep rake above the actors' heads, the impression of an attic was well conveyed. The way the furniture was deployed left some room for improvement.



Photographs by Simon Wood

Of course it is important to see the bed but surely not if it excludes the actors from nearly half the visible acting area. For many of us it was mildly irritating to have to rely so much of the time on sound alone for our impression of Cliff. Apart from the fact that Mr. Lewis's Welsh accent was not the most convincing part of this actor's performance, his reactions at all times to the sinister battle between the other characters makes an important line of reference throughout most of the play. Then again more variety in the actors' patterns of movement, particularly Mr. Davies's, might have been permitted by another arrangement of the main armchair and table; while the admirable work of the property mistress could, with advantage, have been extended to providing a greater array of newspapers about the floor and more important still, for Jimmy Porter, a quantity of his old books.

With few reservations, therefore, one can regard this latest production of the Theatre Club as a great success—as the collection boxes testified. But it is to the sureness of the individual performers and their excellent team-work under Richard Sudworth, that the evening's laurels must go. The ever-recurring miracle of the stage, constructed against all rules of perspective and laws of gravity and a helpful, friendly Front-of-House management are further achievements that can only be the result of many weeks' careful planning and sheer hard work on the part of the active members of the Club.

Their efforts are usually well appreciated by the audiences who attend, but what of those who don't? Are they aware that for a silver contribution ("and from consultants, nothing less than paper!" —D.S.-C.) they can participate in lively theatre in an enthusiastic atmosphere?

In the next issue "Criticism" will review the concert to be given by the Guy's Hospital Music Club on Monday and Tuesday, 18th and 19th March in Guy's Hospital Chapel. This will be a performance of a motet "Jesu Priceless Treasure" by J. S. Bach.

Guy's Hospital Photographic Society

A meeting of the Society will be held in the Clinical Theatre, New Guy's House, on Thursday, 14th March, at 6.45 p.m. Dr. A. R. Michaels, Ph.D., former Editor of *Discovery* will be showing and talking about a film, the subject being—

'*Original Motion Pictures of Captain Scott's Expedition to the South Pole in 1911.*'

In combination with this, there will be an exhibition of the 'Photography of Faces and Places', for which contributions will be gratefully received, and should be left with the Medical School Office, or given to the Secretary (J. S. Gregson).

Records of the Residents' Play Songs

Applications for records of the Residents' Play should be sent to T. C. Northfield at the College. Only a limited number is available, and applications will be dealt with in the order in which they are received. Those interested are advised to await delivery of a record before settling payment (price : £1 each).

CORRESPONDENCE

Letters to the Editor of the Gazette

Errors of Transcription

SIR,—The *B.M.J.* attempts to please
By printing C° and F° degrees.
But when they tried to change the latter
They got it wrong and raised a clatter

The *Guy's Gazette* so keen to tease
With glee moved fast this chance to seize.
They print next week a scurrilous verse
To which our reply is fairly terse.

We do not wish to be severe
But there's another lesson here,
From Registrars at the Alma Mater
"Editors should check their data".

Six months may be a little long
For journalists who got it wrong.
But if in time they do repent
We think it may be time well spent.

Yours etc.,
J. A. P. TRAFFORD.
A. P. HOPKINS.

References:
1 *Brit. Med. J.* (1963), **1**, 400.
2 *Brit. Med. J.* (1963), **1**, 545.
3 *Guy's Hospital Gazette*, 23rd February, 1963.
4 *Proc. Vassall. Trib.* (1963), **174**, 907.

A Doctors' Threat to Strike?

SIR,—May I comment on your statement in *Passim* (January 26th, 1963), that doctors threatened a strike in 1959 ? The press and most of the public did call the doctors' threat, a threat to strike but actually they threatened to resign from the N.H.S. A very different thing. To make things clear for those of your readers who were not interested in medical matters 15 years ago, when the N.H.S. was in the process of birth, I must go back in history. Writing from memory doctors were asked—pressed—to join the service without any agreement on terms of payment, except a promise that a committee would recommend terms. The government promised to honour its findings. This committee ascertained the average earnings of doctors during the years preceding the war and from this devised a scale of remuneration that would leave them, financially, about as well off as they were pre-war, taking into account the fall in the value of money. It added that if the value of the pound fell further the sums paid should rise *parri passu*.

The government did not keep its promise. After some time the matter was brought up in Parliament and there was a debate to decide whether or not the government's promise should be kept. Another committee was appointed under the Chairmanship of Judge Dankwaerts. It found in favour of the doctors. Things were better for a time but the government defaulted again. No medical pressure had any effect and so in 1959 the doctors threatened to resign from the service. At the same time they undertook to work for a period of three months,

I think, following resignation, for nothing, and then proposed to carry on as private practitioners. As an alternative to this line of action the government was asked to set up another "Dankwaerts" committee to arbitrate. There was at no time any suggestion of stopping work.

I have written because some of your readers may not know the story, and may, very properly, be shocked at the idea of a doctors strike. I think we can condemn the communist led E.T.U. shop stewards with a perfectly clear conscience.

Yours etc.,

E. W. SHEAF.

Lark's Hill,
Longdown, Guildford.

General Practice in England

SIR,—My contemporary Mike Leckie has undoubtedly fallen on his feet in Canada, but the ebullient satisfaction with his lot, and his pity for General Practice in England must not be allowed to go unanswered.

I read with pleasure of the community which will build a house and surgery to attract a doctor, but doubt the wisdom of providing him with facilities for other than "minor ops." Was it not to America that we had to go to find a surgeon with sufficient experience in repairing damaged bile ducts, to reconstruct that of one of our Prime Ministers ?

If a G.P. in England "descends to the level of secretary and general buck-passer", then it is his own feet that have carried him there. As Dr. Leckie says, the doctor in this country is better trained for General Practice than anywhere else in the world, and it is my belief that our National Health Service, imperfect though it may be, allows the G.P. to exercise to the full, and for all his patients, his diagnostic skill. Pathological and Radiological facilities in full are at his elbow; E.C.G.s can be arranged. If the doctor cares to exercise himself, very few patients need be sent to Out-patients for pure diagnosis.

I agree that G.P. medical beds in hospital, with regular consultant rounds, would be a welcome addition, but many ill people with Coronary Thrombosis, Pneumonia, Cerebro-Vascular Accident or Appendix Abscess, to instance four of my recent cases, can be brought back to health not only with the care of their family physician but in their own homes. Domiciliary visits from consultants, district nurses and Home Helps are readily available, and every patient can afford the price of the effective modern drugs we have been trained to use.

Dr. Leckie speaks of the crying shame when the experienced houseman slips into the frustration of the National Health Service, specialisation having perhaps failed. But General Practice is itself a challenging speciality (a cliché, but a very true one) in which the doctor's knowledge of every branch of medicine is constantly taxed. A doctor who drifts into practice will be frustrated and disheartened but he who sets out to teach himself how to practise medicine in the home will be constantly stimulated by fresh scientific and social problems, and rewarded by seeing his own patients become well through his own efforts.

But even here he need not rest content, for if he conceives an interest in any particular subject, for instance Physical Medicine, E.N.T., Ophthalmology, or Fractures, he will find specialists in the field ready to welcome him to their clinics and allow him to participate in the treatment of the patients. This, of course, can only lead to an improvement in the practitioner's ability.

Finally, the G.P. who learns to work efficiently, and augments his salary with dental gases, insurance examinations, etc., can acquire a large enough number of N.H.S. patients to gross £3,500 to £4,000 per year without undue strain, quite apart from such private practice as he attracts and cares to maintain.

Yours etc.,

CLIFFORD HARLEY.

35, Woodcote Valley Road,
Purley, Surrey.

REVIEW

THE CHILD AND HIS SYMPTOMS.

By JOHN APLEY and RONALD MAC KEITH. Blackwell, 1962. *Price* 25*s*.

Nothing is more confusing to the new clinical student than the exclusiveness of each new branch of medicine he studies. First he is a general surgeon, then he's a physician, then he's a orthopaedic surgeon, a dermatologist, an ophthalmologist, psychiatrist and so on. He is expected to adopt the attitudes of whichever group he is with. It is this that makes paediatrics such an attractive subject for him, for here, as in no other speciality, with the exception of geriatrics, he is concerned not with patients with particular types of problem but with a particular group of patients with all types of problem. In paediatrics he suddenly finds he is facing a patient who must be treated as a whole, whose complaint must be related to the individual. It is not surprising to find, therefore, that it is frequently the paediatrician who has the broadest and wisest approach to medicine. An account of their method of practising medicine is likely to have application far beyond the field of paediatrics and to be worthwhile reading for all practitioners. This proves to be the case with this fine book by Drs. Apley and Mac Keith. Their carefully structured volume includes not only an account of the diagnosis and management of most of the common illnesses of children, but always pays careful attention to the relationship between the patient and the doctor.

The book deals chapter by chapter, as the title implies, with the child and his symptoms; that is, we start with what the child complains of and relate this to various alternative diagnoses. This is in contrast to the usual textbook approach of discussing a disease entity and its symptoms. The method does lead to some odd gaps. For example, there is nothing about the common infectious diseases which may present quite varied problems where a perceptive doctor can save much worry (Mumps, for example, worries many a young adolescent who has heard garbled accounts of its effects on his genitals). Nor is there a section on the doctor and the toddler when routine visits may be utilised to establish good relationships which stand up in more troublesome times.

But these sins of omission are more than made up for by the excellent chapters on recurrent pain, recurrent pyrexia and cyclical vomiting which lead up to a discussion of the periodic syndrome. The chapters on infant feeding contain a huge amount of information succinctly presented. There are other valuable sections on obesity, thinness and debility and the authors are at their best in their final section 'Doctor and Patient'. Here they discuss the Consultation, Diagnosis, Reassurance and Management. The account of reassurance, both its positive and its negative aspects, is particularly good:—

> '*Reassurance can be a valuable weapon, but it should be used thoughtfully. Such phrases as 'There's nothing wrong', 'Don't worry' and 'It's all right' are essentially spoken by the doctor to himself*'.

In conclusion they write:—

> '*To reassure is to restore confidence; and, to be most effective, the practice of reassurance should be based not only on anatomy, physiology and pathology but also on an understanding of how people think and feel*'.

Another remarkably appealing feature of this book is that it is pleasant and easy to read. The style is a model for the medical author and results in a book that one can happily take to the armchair in an evening—there to read it, enjoy it, learn from it and even be sufficiently stimulated by it to stay awake !

MARTIN C. O. BAX.

SPORT

RUGBY

GUY'S v. ST. MARY'S

Guy's l. to r.—R. Brown, A. Lloyd-Edwards, B. Kingdon, R. Myall

For the second year in succession a talented St. Mary's fifteen has knocked the Hospital out of the Cup. The Competition, this year, has been upset in time and prospect by the severe winter and this second round match against St. Mary's was in fact four weeks overdue. Both teams had recommenced their fixtures a fortnight before this Cup meeting, during which time the Hospital had lost to Aberavon and Exeter and St. Mary's had lost narrowly to Rosslyn Park and beaten Westminster Hospital and London Welsh. The successful preparations of our opponents and our relative inaptitude predicted a trial for the Hospital of overwhelming submission and humiliation.

Our submission was not in fact easily gained, and our feelings scarcely humiliated. The Hospital's defence was pierced successfully on only one occasion and St. Mary's added to this try, with two penalty goals. The expected variety of St. Mary's attack was upset and checked by a dogged defensive cover, in which Myall, at full-back, the backs Kerner, Egwuatu, Biggs and Edgar, and Peace from the second row were outstanding. The Hospital's captain, Lloyd-Edwards, marshalled his forces with renewed vigour. In the face of considerable odds, the Hospital's efforts outreached expectations and in this intense and elevated competition it is not unreasonable to estimate negative success. A brief offensive period towards the end of the game brought Guy's close to scoring, as did two penalty attempts at goal. But, at "no-side", St. Mary's were deservedly victorious. A full report appears below.

Last Saturday, on a greasy pitch at H.O.P., the fifteen met London Welsh, whom St. Mary's had earlier beaten. The associated scores forecast a close game. Thus it was, for though the Welsh had it their own way in the first half, scoring eleven points, the Hospital rallied after the interval and scored two fine opportunist's tries thorugh Egwuatu and Kerner. Edgar, who just failed to convert these tries from the touchline, had earlier kicked a penalty goal.

BOXING

Following a gap of several years, the Boxing Club recently renewed their fixture with Trinity College, Dublin, in Dublin. The Club was unable to enter its strongest team as three members were involved in examinations at the time and the captain, B. Taylor, spent most of the visit in bed with gastritis. In spite of these set-backs, most members boxed encouragingly, but the match was lost by six bouts to two.

The match started on an hopeful note, for D. Edgar (*Guy's*) punished Hodgenson (*Trinity*) with several hard right swings and the contest was stopped in the second round. The following bout went all three rounds, with K. Hughes (*Guy's*) worrying his opponent, Sudatua, in the first half of the contest. Tiring rapidly in the last round, Hughes was put down for a count of eight, but fought on to the end, although the decision went against him.

Guy's took the lead again in the third bout, when J. Zadeh (*Guy's*) outpaced and outpunched Paul (*Trinity*). The contest was stopped in Zadeh's favour in the second round. B. Hartley (*Guy's*) faced Molsworth (*Trinity*) with considerable enthusiasm and aggression. His Irish opponent proved to be too experienced, however, and took the contest by keeping Hartley at a distance and scoring with many good straight lefts.

Thus, at the half-way stage, the match stood at two bouts all and an appreciative crowd gave Guy's every encouragement in the remaining contests. No contest was more noisely received than that in which M. Murray, making his debut for the Club, lost narrowly to M. Hine (*Trinity*). Both boxers were wildly aggressive in the opening round and Murray's efforts appeared hampered by his short reach and the length of his hair. Fortunately, a deft glance with the scissors of Charlie Pocknell, the Hospital's second, at the end of the round, relieved a surprised Murray of the latter handicap. The approach of both contestants continued to be slightly unorthodox in the following two rounds and at the bell a fitter Hine was given the verdict.

W. Omyema (*Guy's*) was matched against the tall, lean Tyler of Trinity. The latter dominated the contest with his long, straight lefts and well timed rights. By the third round these blows had so weakened Omyema that the referee stopped the bout. M. Loader (*Guy's*) started well and tired his opponent, Buchanan, in the opening round. The bout suddenly swung in Buchanan's favour in the second round, however, when a brief flurry of crisp punching had the Guy's man in trouble and the referee had again to interfere.

The match was now lost and in the final contest Guy's heavy-weight, J. Cook, faced an Irish junior champion, J. Coker. Cook boxed sensibly in the opening round putting his longer reach to good advantage. But, the Irishman could not be contained for long and a vigorous onslaught in the following round put Cook down twice and the bout was stopped.

The Club's next event, the U.H. Championships, takes place at the University of London Union on 15th March, at 7 p.m. The Club hopes for a large support.

FOOTBALL

Throughout the long period of cancelled games, the Football Club has made a determined effort to keep fit and in touch with the ball. In near impossible conditions at H.O.P. players have willed themselves through a variety of strenuous exercises, running and ball-work. Thus, although the eleven were beaten by a strong University College side in the Quarter-Finals of the London University Cup, the margin of defeat was only one goal and the whole side gave a creditable performance. Early defensive errors gave U.C. three goals in the first half, but their lead was narrowed by goals from P. Davies and J. Cutler. The game is reported below.

MOTOR CLUB

From the second week-end in March the Motor Club undertake a varied diary of events. Rallies organised within the Hospital include, 'the North Downs Rally' on 16th March, and the Club's, 'Road Safety Event' on 20th April. Further, Guy's representatives will be taking part in the Rosette Rally, organised by the U.H. and U.L. Motor Clubs on March 9th-10th and in the U.H. and U.L. Championships Rally on 23rd March. The Hospital is the holder of the latter title.

Anyone interested in taking part in these events, whether as drivers or navigators, should contact Malcolm Burke, c/o The Dental School.

IAN BAKER

Reports

RUGBY

Inter-Hospitals' Cup—2nd Round

Guy's v. St. Mary's

At Richmond 16th February, 1963

Result—Lost 0-9

After the long frost which postponed this round for six weeks, the spring-like day on which it was played was adequate compensation for the long wait. The game, a very open one, with good running with the ball by both teams was also worth waiting for.

Guy's kicked off into the wind before a large enthusiastic crowd. Immediately St. Mary's were on the attack and dour defence only just held them on the left wing after a forward rush. St. Mary's kept up the pressure in the Guy's half for much of the first half. Their skilful passing movements with forwards joining in French style attacks had the defence wrong footed several times Thomas was feet wide with a 45 yard penalty after ten minutes. Ten minutes later he made no mistake with a slightly easier one. This kick was from the sixth of fifteen penalties awarded to St. Mary's in the first half.

The Guy's pack was unable to supply the ball quickly enough for Boyd to open up the game. From one long kick to touch by the fly-half Guy's were in a position to attack the St. Mary's line but were repulsed. From the eighth penalty Thomas added three more points to make it 6-0. St. Mary's continued to dominate the play but could not manage to score. Strong defensive tackling by the Guy's backs and Peace, who always covered well, kept them out. Wintle put in some testing kicks from the base of the set scrum to both wings but Myall dealt with them all efficiently with a neat catch or a well timed kick.

At half-time the score was still 6-0 but neither side had really settled down. St. Mary's were dropping the crucial last pass in attack and seemed to do their best running after the whistle had gone. Guy's still had not realised that St. Mary's could be beaten by direct open rugby.

The second half started with an attack by the Guy's forwards down the left wing and Price was all but over in the corner. St. Mary's counter-attacked and forced a scrum 5 yds. under the posts. Wintle's long pass found Thomas lined up for a drop at goal but he decided to run and cut the defence in two with a neat dummy to score near the posts. The kick went wide (9-0). This was the crucial score but it was the signal for Guy's to open up the game. They stormed back from the kick-off and from then on, apart from a few brief sorties, pinned St. Mary's in their own half.

The pack gained an ample supply of the ball and Bevan and Boyd combined well to give the centres a good supply. Both made breaks only to be caught by the covering St. Mary's back row. After ten minutes Biggs broke through but inexplicably lost the ball two yards from the line. Both wings put in good strong runs only to be met with equally strong defence. Biggs was wide from 35 yards out a few moments later with a penalty attempt. Egwuatu pounced on a loose ball on the half way line and was only pinned down 5 yards from the line with six defenders hanging on to him. Guy's kept up the pressure and forced another penalty. Biggs was wide again from an almost identical position.

The play by now was a good deal more robust but still very open. Peace and Kingdon were jumping excellently in the lines-out and giving a good supply to the backs. St. Mary's still managed to force attacks, but Myall, with the wind behind him never faltered in defence. On one occasion he gathered the ball and ran with it instead of kicking. Egwuatu had a clear run to the line ahead but Myall's pass went behind his head and the chance was lost.

When the final whistle went Guy's were still pressing hard. This was a deserved victory to a confident St. Mary's side. However, if Guy's had taken even a few of their chances the score might have been very different. Both teams deserve all credit for an enjoyable open game.

Team : R. Myall; R. Kerner, A. Edgar, D. Biggs, E. Egwuatu; N. F. Boyd, D. R. Bevan; J. E. Davies, E. Price, A. Fisher, P. Peace, A. Kingdon; I. A. Baker, D. R. A. Lloyd-Edwards, R. Brown.

ARTHUR MORRIS

February 23rd

1st XV v. Exeter, lost 5-19.

March 2nd

A XV v. London Welsh Druids, lost 5-19.
Ex A XV v. London Welsh 'A', lost 0-14.
Wanderers v. U.C.S. Old Boys 'B', won 6-3.
B XV v. U.C.S. Old Boys 'B', lost 6-19.
Ex B XV v. P.L.A., cancelled.

1st XV Record P. 20 W. 4. D. 0. L. 16.
Points for 134. Against 314

Guy's v. London Welsh

At H.O.P. 2nd March, 1963

Result—Lost 9-11

The Hospital entertained the London Welsh XV, containing four international players among its numbers, at Honor Oak Park for the first time in several years. To suit the occasion the weather was excellent being sunny and even warm ! The condition of the pitch was mixed there being a soft layer of turf over the hard deeper soil. The Hospital were forced to make one change from the side defeated by St. Mary's on Wednesday, J. Hockey replacing J. E. Davies in the front row.

Boyd kicked off for Guy's and the Hospital were soon on the attack when Kerner came into the line to make the extra man enabling Biggs to break on the outside and make ground down the right wing, unfortunately his inside pass was intercepted and the movement broke down. Shortly afterwards Edgar was short with a penalty attempt from 45 yards kicking into the wind.

It had become evident that the Hospital were going to get a great deal of the ball from the set scrums the power of the London Welsh scrum being too much for them having no specialist loose-head prop. A sliced kick to touch by Boyd enabled London Welsh to score a try far out on the right wing, it was not converted. From the kick off the Hospital pressed hard to the Welsh line but were driven back by the London Welsh international stand off B. Richards. The London Welsh three-quarters were outstanding trying to force a way through the Hospital defence which held out gallantly. Heeling quickly against the lead the London Welsh backs broke clear and their left wing went over in the corner for a try which again was not converted. Just before half time the London Welsh went further into the lead with an excellent try following an outside break by H. Davies their international centre. The second half commenced with renewed pressure by the London Welsh but they could make no headway against an excellent Hospital covering defence in which Kerner deserves special mention. Edgar opened the scoring for Guy's with a 35 yard penalty goal. As if by way of inspiration the Hospital right wing E. Egwuatu scored what must surely be one of his greatest trys for the Hospital. Breaking clear of his wing on the

right hand side of the field deep in his own half he vered inwards through a baffied and bemused London Welsh defence and breaking free from at least four tackles went over the line near the left hand corner flag. Edgar narrowly failed to convert. The London Welsh seemed severely shaken by this turn of fortune and were a little lost at the Hospital driving through with the ball at their feet, Lloyd-Edwards, Brown and Baker were prominent in these moves. A further Hospital score was forthcoming when a kick by Edgar caught the London Welsh right wing flat footed and Kerner ran onto a bouncing ball to race thirty yards down the touch line and score near the corner flag. Edgar once again very narrowly missed the conversion. The game ended with the London Welsh under heavy pressure from a spirited Hospital team which was playing at last to its true form.

JOHN BANFILL

FOOTBALL

Quarter-Final London University Cup

Guy's v. University College

At H.O.P. 23rd February, 1963

Result—Lost 2-3

The Hospital played its first game since early December on a cold but sunny afternoon against a very experienced University College XI. The pitch was covered with two inches of snow which had fallen the night before but after ice had been removed from the penalty areas by the ground staff the playing conditions were quite good.

Guy's won the toss and played with the sun at their backs. The game began with some strong raids by University College upon the Guy's goal, they seemed to settle down to the game and the conditions far more quickly than did Guy's University College were soon in the lead when an error by Guy's allowed the ball to be centred and the defence under pressure conceded an own goal. As if stung into action by this goal the Hospital swung into the attack with some good moves down both wings. A bad clearance from one of these attacks led to the Hospital equalising. P. D. Davies scoring a magnificent goal from 40 yards. His shot deceiving the goalkeeper who was worried by the sun. University College remained unruffled by this score, however, and were soon back on the offensive. A Guy's defence which seemed to lack co-ordination at this stage of the game allowed them to go into the lead again with two more goals before half-time.

From the start of the second half the Hospital defence tightened up considerably and the forwards began to apply pressure on the visitors' goal. A goal for Guy's came when J. Cutler pounced on an error by the visitors' goalkeeper who could only half parry a hard shot from E. Elias. Guy's came more and more into the game as time went on but somehow could not get the equaliser, although forcing the visitors to concede several corners in the dying minutes of the game.

The result was 3-2 against the Hospital, in a very fast open game of football, which was very much enjoyed by players and spectators. The Hospital were by no means outclassed or outplayed by this very experienced team and if they could have settled down more quickly could well have won this game.

JOHN BANFILL

Team : G. Parry; W. Davies, V. Holden; P. Davies, J. Cochrane, N. Trayfoot; R. Shepherd (capt.), E. Elias, J. Cutler, A. Palmer A. Atkins.

1st XI Record P. 19. W. 17. D. 0. L. 2.
Goals for 107. Against 17.

HOSPITAL INFORMATION

APPOINTMENTS VACANT

Applications are invited for the following House Appointments.

At Guy's Hospital :

Resident Obstetrician (Post-registration) commencing 1st May, 1963.

Dermatological House Physician (Post-registration) commencing 1st May, 1963.

Applications should reach the Superintendent not later than **Friday, 15th March, 1963.**

GUY'S HOSPITAL, MAUDSLEY HOSPITAL AND THE SOUTH-EAST METROPOLITAN REGIONAL HOSPITAL BOARD

Applications are invited for appointment as **Senior Registrar in Neurosurgery.** The appointment will be made jointly by the bodies concerned and will be held alternately at the Guy's-Maudsley Neurosurgical Unit and at the Regional Neurosurgery Centre at the Brook Hospital. The appointment will commence on the 1st June, 1963, and will be subject to annual renewal.

Applicants should have had Registrar experience in Neurosurgery and should have a higher surgical qualification.

Apply to the House Governor and Secretary, Maudsley Hospital, Denmark Hill, S.E.5, for form of application, returnable by **28th March, 1963.**

HOUSE APPOINTMENTS

1st March, 1963

Assistant House Surgeons

To :

Mr. Lawrie — Mr. C. F. P. Wharton
Appointed for six months, the first 3 *as A.H.S.*

Mr. Glover — Mr. B. M. J. Wolfe
Appointed for six months, the first 3 *as A.H.S.*

Mr. Brain — Mr. J. E. Hern
Appointed for six months, the first 3 *as A.H.S.*

Mr. Beard — Mr. C. I. Roberts
Appointed for six months, the first 3 *as A.H.S.*

Assistant House Physicians

To :

Dr. Baker and Dr. Joiner } Mr. J. A. Clarke
Appointed for six months, the first 3 *as A.H.P.*

Dr. Boland and Dr. Houston } Mr. C. D. Binnie
3 *months*

Dr. Mann and Dr. Kauntze } Mr. J. A. Child
Appointed for six months, the first 3 *as A.H.P.*

Dr. Hardwick, Dr. MacLean, Dr. Bishop and Dr. Deuchar } Mr. M. V. Smith
Appointed for six months, the first 3 *as A.H.P.*

But whom do YOU consult, Doctor?

50,000 Doctors in these islands (and 20,000 more overseas!) enjoy the privileges and benefits of membership of the British Medical Association.

Q. What are the advantages of membership?

A. A weekly copy of one of the world's outstanding medical journals—the *British Medical Journal.*

The use of a first class medical library—by post if necessary.

Advice on all aspects of professional life.

Scientific and clinical meetings and social functions, both local and national.

These are some of the reasons why the B.M.A. has the large majority of medical men and women, whatever their field of practice, within its ranks.

Let the B.M.A. be at YOUR service.

Q. How much does it cost?

A. Two guineas for each of the first two years after provisional registration. Reduced subscriptions continue to apply for a further seven years.

BMA

For further details please write to the Secretary,
British Medical Association, B.M.A. House, Tavistock Square, W.C.1

Casualty Officers
Miss M. E. Abel
Mr. N. J. Barwell
Mr. J. A. S. Carruth
Mr. N. M. Cohen
Mr. B. J. Main
Mr. A. N. Nicolaides
} 3 *months*

House Surgeons
To :
Mr. Eckhoff — Mr. J. D. F. Bellamy, 3 *months*
Professor Atkins — Mr. J. R. W. Gumpert, 6 *months*
Mr. Wass — Mr. G. W. *Cook*, 3 *months*
Mr. Blackburn — Mr. J. V. Harvey Kemble, 6 *months*

House Physicians
Dr. Baker and Dr. Joiner — Mr. R. N. Maini, 6 *months*
Dr. Boland and Dr. Houston — Mr. T. C. Northfield, 6 *months*
Dr. Mann and Dr. Kauntze — Mr. M. D. O'Brien, 3 *months*
Dr. Hardwick, Dr. MacLean, Dr. Bishop and Dr. Deuchar — Miss R. R. Millis, 3 *months*

Resident Obstetricians
1.11.62—30. 4.63 — Mr. J. E. A. Knowles
1. 1.63—30. 6.63 — Mr. P. S. Firth
1. 3.63—31. 8.63 — Mr. M. V. Bright
1. 5.63—31.10.63 — Vacancy readvertised (Post-registration)

Throat and Ear House Surgeons
Mr. A. R. Nathoo — 3 *months*
Miss M. Restell — 6 *months*

Orthopaedic House Surgeons
Mr. T. A. M. Stoker — 3 *months*
Mr. K. M. Pagliero — 3 *months*

Dermatological House Physician
1.11.62—30. 4.63 — Mr. N. E. Jensen
1. 5.63—31.10.63 — Vacancy readvertised

Neurological House Physician
Mr. J. C. Simpson — 6 *months*

Genito-Urinary House Surgeon
Mr. D. M. Lewsey — 3 *months*

House Surgeons to the Thoracic Unit
Mr. F. A. W. Schweitzer — 3 *months*
Mr. A. B. Richards (S.H.O.) — 3 *months*

Children's House Physicians
Mr. J. N. Crossley — 3 *months*
Mr. R. H. Jago — 6 *months*

House Physician in Radiotherapy and Clinical Pathology
Mr. J. H. Steadman — 6 *months*

House Physician in the Department of Experimental Medicine
Mr. R. A. Sells — 3 *months*

House Physician—Part-time in Radiotherapy and Part-time in Clinical Pathology
Mr. G. Stewart — 3 *months*

R.M.Os. in Nuffield House
1.12.62—31.5.63 — Mr. E. J. W. Gumpert
1. 1.63—30.6.63 — Miss M. N. R. Pitt

House Physicians in the Department of Psychological Medicine
1.10.62—30.9.63 — Mr. D. H. Myers
1.10.62—30.9.63 — Mr. W. E. M. Pryse-Phillips

Resident Anaesthetists
1.12.62—31.3.63 — *Mr. B. Geffin (S.H.O.)*
1. 4.63—31.5.63 — Miss P. B. Hewitt
1.12.62—31.5.62 — Miss J. E. Banbury
1. 3.63—31.8.63 — Miss M. Cronin (S.H.O.)
1. 3.63—31.8.63 — Miss P. H. Curry

ORPINGTON HOSPITAL

House Surgeon (General Duties with Physical Medicine) — Mr. G. D. Nicholson
House Surgeon (General Duties with E.N.T.) — Miss D. M. H. Laganowska
House Surgeon (General Duties with Orthopaedics) — Mr. J. W. Ogilvie

CHANGES OF ADDRESS

Dr. Simon S. Brook, Flat 1, Eldersley Tower, Park Road, Redhill, Surrey.

Dr. and Mrs. J. Michael Hall, Fairmile, Shirley Hills Road, Addington, Surrey.

C. G. MacG. Williams, Esq., B.D.S., L.D.S., R.C.S., Orchard Glade, Stockcroft Road, Balcombe, Sussex. Tel. Balcombe 364.

BIRTHS

RUSSELL.—On 21st February, 1963, at The Outspan, Croxley Green, Herts., to Maureen (née Hatton), and Patrick Russell, M.B., B.S., a daughter Catharine Mary, sister to Jeremy, Nicholas and Christopher.

WRIGHT.—On 26th January, 1963, to Judith (née Fletcher), and Richard Wright a second son.

DEATHS

DOHERTY.—On 22nd February, 1963, at his home, J. W. Doherty, L.D.S., of Buckmore Cottage, Bell Hill, Petersfield, Hants.

FOURAKER.—On 13th February, 1963, Edgar Herbert Fouraker, L.D.S., R.C.S., of 30, The Ridge, Purley, Surrey.

POTTS.—On 25th February, 1963, suddenly, at 1, Kelsey Way, Beckenham, Edgar Valentine Potts, L.D.S., R.C.S., late of 29, Albermarle Road.

WEBB.—On 5th February, 1963, after a short illness, Dr. Harold Webb, 3, Hawes Road, Bromley, Kent.

IN MEMORIAM

In ever loving memory of John Garvin Stebbing, M.B., B.S., died 23rd March, 1957.

EDITORS W. G. REEVES
S. M. WOOD

GUY'S HOSPITAL GAZETTE

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PASSIM

Casualty Service

A local newspaper has recently reported the complaint made by a few patients of Guy's Casualty Department to the Hospital about delays in receiving treatment, and noted the Governors' admission of the existence of delays. It could hardly be expected to make sensational news, for Casualty Department delays are as commonplace and as widely accepted as bus-queues and railway waiting-rooms. However, the report has stimulated four dressers to raise one aspect of the problem—the wide variety of patients seen at Front Surgery—and to pose some suggestions as to a remedy (Correspondence: page 146).

Perhaps 'problem' is a misleading word as it hints at a fault which has been neglected by the authorities, whereas paradoxically, the delays are in fact a manifestation of a tradition of scrutiny and pursuit of the priorities in Front Surgery. The paradox arises because it is by allowing time for adequate attention to the patient, and training of students, using individual rooms for the different categories of illness (with special emphasis on avoiding cross-infection), and constant liaison with other hospital departments, that the Casualty Department frequently becomes saturated and delays occur. Thus when the organiser of the recent protest conceded that "medical treatment was first class" he was himself pointing out one of the reasons for the delay of which he complained.

Nevertheless, a statistical survey of the feelings of patients who resignedly wait for attention and an accurate record of factors causing delays might reveal ways to eliminate some of them. Such a survey in the Out-Patient Department, made by the Out-Patients Study Group at Guy's of 1,000 Out-Patients, is at present being analysed and preliminary results show that some two-thirds of all patients, when questioned directly about delays in the waiting rooms, did not think that they were kept waiting too long. Of the one-third who did feel they were unduly delayed, very few resented it and typical reactions were; "I'm quite willing to wait when the job is done properly", "Time must be expended on thorough treatment" and "You expect to have to wait where students are being taught."

The resentment expressed by the remaining few may well be a reflection of a general dissatisfaction of the medical service as it confronts them, and unwittingly they choose to blame their disquiet on

Casualty delays, being the nearest scape-goat to hand, rather then encountering a serious failing in the Casualty Department *per se.*

Assuming then that some of the complaints which arise are symptomatic of general disillusion with the medical image, the student dresser can play the useful role of a public relations man. The patient's attitudes to students are mostly amicable, frequently grateful and only rarely intolerent, and as the very presence of students adds to the delays which patients inevitably experience, a dresser should feel doubly obliged to use his unique *rapport* with patients to ensure that they are not totally ignored as they await treatment.

Medical Semantics

There is nothing quite like the thrill of using an obscure word for the first time; the more so if one feels that it is the only word that exists to fit the requirements of the moment. But alas, this is all too often used in the Stephen Potter tradition, *i.e.*, merely to confuse and so disarm one's opponent, or the word itself is a gross misderivation, and both it and its supporter are liable to instant banishment by any passing lexicographer. Further one may sail gaily over superb errors of syntax and grammar leaving the pundits holding their ears.

In this Age of Enlightenment when that classical minority who *know* about words is dwindling, it is of great importance to reflect on one's own verbal misdemeanours. We do not profess to have escaped this plague but nowhere is it so prevalent as in the field of medical terminology. Here fresh words are coined daily (three daily, according to Pappworth) and often it is tempting to think that by using one of them as a label, one has established an aetiological diagnosis.

The aura and mysticism surrounding such innovations is very real but here as anywhere 'blinding with science' is 'blinding with words'. Words must change with their meaning and if this is carried out many of these criticisms will be obviated, but there looms nevertheless large mis-shapen constructions known collectively as Jargon which tend to escape this scientific appraisal remaining the lingo of the lazy and swell the sea of ambiguity.

The ultimate test must be one of communicating the truth, the nature of which should be self-evident to anyone with a knowledge of the appropriate roots—usually Greek and Latin. For Nephrosis can mean too much kidney, the presence of a kidney, or an affliction of the kidney, and Thalassaemia means sea in the blood.

The most unfortunate invasion of a literal rending of medical fact has been achieved by those who advocate the abbreviation. Here we read of DLE, FIGLU and HIAA and as Dr. Vertue points out in an article in this issue, such abominations as URTI. This tendency can easily mask an accurate expression of the facts. However, one has to bear in mind the hazards of a medical terminology which embraces such euphonious constructions as Pneumonoultramicroscopicsilicovolcanoconiosis now fortunately abbreviated to pneumoconiosis. But perhaps after all the most pleasant habit to acquire is that of floccinaucinihilipilification.

GUY'S DIARY

MARCH

EXHIBITION *The Hip.*

23rd S 10.00 Clinico-Pathological Meeting. Clinical Theatre.

25th M 1.00 Dr. BAKER. Clinical Lecture.
Pulmonary Heart Disease.

29th F 1.00 Mr. MANSIE. Dental Clinical Lecture.
'Trouble' in the Dental Theatre.

29th F 2.15 Combined Round. Department of SURGERY. Anatomy Theatre, Medical School.

APRIL

EXHIBITION *Bone Tumours.*

2nd T 1.00 Dr. BISHOP. Clinical Lecture.
Eunuchoidism.

5th F 1.00 Dr. KAUNTZE. Clinical Lecture.

2.15 Combined Round. Professor BUTTERFIELD and the Department of EXPERIMENTAL MEDICINE, Anatomy Theatre, Medical School.

8th M 1.00 Mr. BEARD. Clinical Lecture.

9th T 1.00 Dr. MACKEITH. Clinical Lecture.

Dr. Boland gave his last teaching round at Guy's two weeks ago and although he has now retired from the teaching staff, he will remain at Guy's as Dean of the Medical School.

Dr. P.H.N. Mathews, at present senior registrar in Ophthalmology, has been appointed Consultant Ophthalmologist to the Suffolk Group of Hospitals.

MEDICAL FIRMS

Following Dr. Boland's retirement, the new Medical Firms will be as follows, commencing 9th March, 1963 :

Dr. Mann, Dr. Scott and Professor Butterfield.
Dr. Hardwick and Dr. MacLean
Dr. Baker and Dr. Houston
Dr. Kauntze, Dr. Joiner and Professor Butterfield.

Dr. Kauntze will take over Dr. Boland's beds in Addison and Wilks Wards. Dr. Scott will take over Dr. Kauntze's beds in Mary and John Wards. The four cardiac beds in William Gull Ward have yet to be allocated.

Out-Patients changes will be :—

Dr. Kauntze	—Cardiac Out-Patients	Monday Afternoon.
Dr. Scott	—Medical Out-Patients	Saturday morning
	Chest Clinic	Thursday Afternoon

OBITUARY

Alfred Nightingale, M.A., Ph.D., F.Inst.P.

Dr. Alfred Nightingale, who died suddenly on 27th February, at the age of 40, was Lecturer in the Physics Department from 1947 till 1959. He will be chiefly remembered at Guy's for his interest in electromyography, both in the Hospital where he gave much assistance in developing the apparatus in the Department of Physical Medicine and collaborated in investigations in medical and surgical departments, and in the Medical School, where his main work was in collaboration with Dr. J. Joseph in electromyographic studies of posture. It was as a by-product of this that an electromyographical prosthesis was developed by Nightingale, the late Professor J. Whillis and Mr. C. K. Battye, since to receive considerable publicity. He was also responsible for the course in Physics for Part I of the Diploma in Physical Medicine, for which he wrote a textbook. He was a Recognised Teacher of London University.

Nightingale left Guy's in 1959 to become Chief Physicist at St. Thomas's Hospital. His responsibilities here were much wider, including radiology, but he continued his electronic work, now in connection with poliomyelitis. He was Secretary of the Biological Engineering Society from 1960 to 1962, and Editor of "Medical Electronics and Biological Engineering", the official organ of the International Federation for Medical Electronics. His untimely death cuts short a valuable and promising career and he will be hard to replace. He leaves a wife and four children to whom we extend our deepest sympathy.

QUODLIBET SOCIETY MEETING

28th February, 1963

Mr. Elmer Browne, Chairman of the English Company of Merck, Sharp and Dohme, talked about "Pharmaceutical Research—Risk or Remedy." That one hundred million pounds is spent per year throughout the world on drug research by the various companies is sufficient fact for the financial risk to an individual company to be appreciated. The remedy is harder to define, and essentially must include stimulation of investors, backing a wide spectrum of research, and good advertising and selling of established drugs.

In the questioning which followed, Mr. Browne was attacked by all ten of his audience, including Professor Robson. Why are not toxicity tests adequately advertised—why does the bad habit of multiple trade-names for the same drug persist—why is as much money spent on advertising drugs as on research into them ? Mr. Browne got redder, but defended well. At a quarter-to-eleven the meeting had to be closed.

Julian Critchley will be coming to speak to the Society in March—and Frankie Howerd in April. Anyone interested is welcome.

THE AETIOLOGY OF CEREBRAL PALSY

by Dr. Alison D. McDonald

Paediatric Research Unit

Figure 1.

Spastic cerebral palsy, from "*On the influence of abnormal parturition, difficult labours, premature birth and asphyxia neonatorum, on the mental and physical condition of the child especially in relation to deformities*" by Dr. W. J. Little in Obstetrical Transactions, 1862.

The term "cerebral palsy" was used by William Osler in "The cerebral palsies of children, a clinical study from the Infirmary of Nervous Diseases, Philadelphia", published in London in 1889. It was presumably derived from the German "cerebrale Kinderlähmung" and was later given extensive publicity through a monograph by Sigmund Freud entitled "Die Infantile Cerebrallahmungen" which appeared in 1897. As suggested by Osler's use of the plural, the term

"cerebral palsy" embraces a variety of clinical and aetiological entities. Most enquiries into possible causes of cerebral palsy have been of an epidemiological nature, which broadly speaking involves studying characteristics of groups of patients rather than individual cases in detail. For enquiries of this kind, definition and classification of disorders assume considerable importance, as without them it is difficult to interpret findings, and no satisfactory comparisons can be made between the results of different surveys.

Cerebral palsy may be defined as "*a persisting qualitative motor disorder appearing before the age of 3 years, due to a non-progressive interference with development of the brain*", (Little Club, 1959). Its prevalence has been variously estimated at between 1 and 6 per thousand live births. Some of this variation is no doubt due to different definitions and methods of case-finding; 2 or 3 affected children in every thousand live births seems to be the most likely general rate.

Clinical Picture

The essential feature is paresis of cerebral origin, commonly spastic in type (Figure 1). Involuntary movements of a choreic or athetotic nature are found in a minority of cases, generally accompanied by disturbances of muscle tone and posture (Figure 2). In a small proportion of cases there is ataxia, a degree of inco-ordination greater than can be accounted for by paresis or involuntary movements.

Spasticity is found in perhaps three quarters of all cases of cerebral palsy. It is detected by increased resistance to passive movement at a joint in one direction only.

Classification

Since the cause of at least four fifths of cases of cerebral palsy is unknown, they are classified on clinical rather than aetiological grounds. A number of different classifications have been proposed. The one suggested by the Little Club has the following main categories:

spastic cerebral palsy
hemiplegia
diplegia
double hemiplegia
choreo-athetoid cerebral palsy
ataxic cerebral palsy.

Search for causes

Different approaches have been used in attempts to find out the causes of cerebral palsy. In some studies, a series of cases has been assembled and characteristics of parents, pregnancy, labour, delivery and early post-natal life have been compared with a control series or with the general population. An alternative approach has been to examine known mechanisms of brain damage, for instance, cerebral anoxia, severe haemolytic jaundice, genetically determined and specific metabolic disorders, and see how far these can account for cerebral palsy.

POST-NATAL CAUSES

Whereas most cases of cerebral palsy date from around the time of birth or before, a proportion occur during early childhood in children whose previous development was normal. Some 10 per cent. of cases of cerebral palsy arise like this and often take the form of a spastic hemiplegia preceded by an illness with convulsions and signs of cerebral irritation. Often the cerebral palsy is due to either the illness or the treatment given, but in some cases a prior abnormality of the brain may be present.

GENETIC CAUSES

Böok (1953) found a disorder which he called spastic paraplegia with oligophrenia in about 2 per thousand individuals in a small

Figure 2.
Athetoid cerebral palsy, from "*On athetosis or imbecility with ataxia*" by Dr. T. Clay Shaw in Saint Bartholomew's Hospital Reports, 1873.

isolated community in North Sweden. Other pedigrees have been described in which spastic paraplegia or diplegia generally with mental defect and sometimes with ichthyosis appears to have been inherited in a manner suggesting either a dominant or an autosomal recessive gene or occasionally a sex-linked recessive gene. However, probably less than 2 per cent. of all cerebral palsy is genetically determined.

Chromosomal anomalies may be handed on from parent to child, or may arise anew during gametogenesis or after fertilization. Gross chromosomal anomalies have been found in only a very few cases of cerebral palsy.

KERNICTERUS

Kernicterus, which is the name given to staining of the basal ganglia in the course of severe neonatal jaundice is frequently followed by choreo-athetoid cerebral palsy. There are a number of ways in which severe neonatal jaundice can be caused. Haemolysis of red blood corpuscles may occur in maternal-foetal rhesus or less commonly

ABO blood group incompatibility. Apart from iso-immunisation, severe neonatal jaundice may occure in premature infants for so-called physiological reasons. This seems to be mainly due to a lack of glucuronic acid transferase activity in the liver which in mature infants converts fat soluble bilirubin to water soluble bilirubin glucuronide. Vitamin K analogues given to prevent haemorrhagic disease of the newborn have been found in large doses to produce a rise in serum bilirubin.

Kernicterus rarely occurs with blood bilirubin levels of below 20 mg. per 100 ml.; with levels between 20 and 30 mg. about one infant in five is affected and at over 30 mg. per 100 ml., about one in three. The mechanism by which bilirubin causes choreo-athetoid cerebral palsy appears to be by entering nerve cells, particularly of the basal ganglia, which it stains yellow and in which it presumably interrupts normal metabolic processes.

Hyperbilirubinaemia and therefore kernicterus are virtually preventable by replacement transfusion, and so it is particularly important to be alert to the risk in cases of maternal-foetal blood-group incompatibility, and to keep a careful watch on blood bilirubin levels in neonatal jaundice.

PREMATURITY

One of the most striking observations made by Little was the high proportion of premature infants among cases of cerebral palsy. This has been confirmed in subsequent investigations, and between 25 and 40 per cent. of cases have been reported to be premature according to the international definition of prematurity, which is a birth weight of not more than 5½ lb. (2,500 g.). This figure may be compared with a rate of about 5 per cent. in surviving children in white races; in negroes the rate is considerably higher due to a lower mean birth weight.

There is an increased proportion of premature infants in all clinical types of cerebral palsy, but particularly in spastic diplegia, in which there is a generally symmetrical spasticity involving predominantly the lower limbs. In this type of cerebral palsy a bimodal birth weight distribution was found suggesting that there are two ways in which this disorder can arise, one in premature infants and the other in children of around average birth weight. Drillien, Ingram and Russell (1962) found that in infants who were mature, or about average birth weight, the mothers tended to be older, more often primiparae, and had more complications of labour and delivery than both the mothers of the premature children with diplegia and the mothers of a control group of mature infants. Since complications of pregnancy are common in premature births, a misleading association with these complications is liable to be found unless a suitable control sample is available for comparison. In a survey of over 1,000 children weighing not more than 4 lb. (1,820 g.) at birth which I have been undertaking in collaboration with the Society of Medical Officers of Health, children who developed diplegia could be compared with all remaining children in the sample who did not have diplegia.

Various hypotheses have been proposed to account for the relation-

ship between spastic diplegia and low birth weight. A favoured one has been that both cerebral palsy and premature birth have a common origin in some underlying abnormality of the reproductive process. There has been a general reluctance for a number of reasons to attribute spastic diplegia to birth injury. Small premature infants with spastic diplegia tend to have a symmetrical paresis, few complications and relatively normal intelligence, compared with the frequently asymmetrical paresis often complicated by fits and low intelligence which may follow birth trauma. Anoxia has been favoured as an explanation of spastic diplegia in small premature infants, but against this, premature infants are known to be able to survive anoxia for considerable periods of time. Further, a selective susceptibility of upper motor neurones would have to be postulated. There are, of course, other ways in which the extra-uterine environment differs from the intra-uterine environment, and perhaps some disturbance of normal enzymic maturation may damage upper motor neurones. For a detailed review of the relationship between prematurity and cerebral palsy the reader is referred to an article by Polani (1958).

The results of our survey so far suggest that the incidence of spastic diplegia is independent of the reason for premature birth, which makes a common cause of the two very unlikely. A close relationship with maturity as measured by length of pregnancy was found; more than 10 per cent. of children born before the 31st week of pregnancy had spastic diplegia.

BIRTH FACTORS

In the paper on cerebral palsy which William Little read in 1861 to the Obstetrical Society of London, he described the "influence of abnormal parturition, difficult labour, premature birth and asphyxia". In the past 100 years, disappointingly little has been added to our knowledge of the factors responsible for cerebral palsy and of the mechanisms by which the damage is done. Many surveys have been undertaken with a view to assessing the importance of birth factors, but in many no satisfactory control group has been used for the purpose of comparison. The largest and best controlled investigation so far was reported by Eastman and colleagues in 1962. The birth histories of 750 children with cerebral palsy were studied and compared with the records of the children born next in the same hospitals. Some of the findings in this and other surveys and their significance will be discussed.

The frequency of first births is higher in patients with cerebral palsy than in the general population, and the mean age of mothers is generally higher. These observations suggest that the same factors which are known to increase the risk of foetal and infant death in elderly primiparae may also be important in the aetiology of cerebral palsy. One of the main questions, especially from the point of view of prevention is whether the infant is normal prior to birth or whether there is any evidence of earlier damage. Dr. E. D. Alberman of the Paediatric Research Unit, who has been undertaking a controlled study of birth factors in cerebral palsy, finds some indication of retarded foetal growth in spastic diplegia and in athetoid cerebral palsy, com-

pared with controls. If this finding proves to be generally true, the most likely explanation seems to be that placental insufficiency plays a part in causing damage.

A preponderance of males has been found in most series of children with cerebral palsy, especially in spastic hemiplegia. Further, several workers have found that among heavier infants there were more children with right compared with left hemiplegias. A possible explanation for this is that since left occipito-anterior presentations are commonest, the left cerebral hemisphere is more often subjected to pressure against the sacral promontary.

In most reported series of cerebral palsy, twins are about 5 times as common as in the general population. Much, if not all of this excess appears to be due to prematurity; Eastman and colleagues attribute some of it to an unfavourable intra-uterine milieu which they think is exemplified by the fact that in a quarter of affected twins the co-twins failed to survive the neonatal period.

BIRTH TRAUMA

Except in the case of spastic diplegia in small premature infants, abnormalities of labour and delivery are a striking feature in the history of children with cerebral palsy of all types, but as Evans (1948) pointed out, this is particularly true in athetoid cerebral palsy. Complications are of many varieties, for instance: breech presentation, prolapsed cord, delay in the second stage and mid or high forceps delivery.

Although it is hoped that hyperbilirubinaemia will virtually be eliminated as a cause of cerebral palsy, it has in the past contributed up to about 5 per cent. of cases. Extreme immaturity may account for something like 15 to 20 per cent., and genetic causes perhaps 2 per cent. Excluding these, traumatic factors during delivery are evidently important in the aetiology of cerebral palsy. In this connection, Eastman and colleagues considered that their findings with regard to Caesarean section were significant. They found a similar number of abdominal deliveries in both cases and controls, but the indications were very different, and a high proportion of Caesarean sections in the cerebral palsy series were done for complications during labour which could have damaged the foetus before section was carried out. They think that further evidence should be accumulated, but that in the meanwhile the rôle of labour in the aetiology of cerebral palsy, especially in the presence of true disproportion, must be looked on with suspicion.

Pathological evidence, which it must be admitted is mainly derived from severely affected individuals often with mental defect and epilepsy, indicate that residual lesions compatible with intracerebral or meningeal haemorrhage or thrombosis occurring around the time of birth, are not infrequently found in spastic hemiplegia.

ASPHYXIA AND THE ROLE OF HYPOXIA

Often following the various complications of delivery mentioned above, and even in their absence, children later found to have cerebral palsy are shocked, asphyxiated, and apnoeic on delivery. However,

many children with marked asphyxia and apnoea at birth do not develop cerebral palsy, and many children with cerebral palsy have apparently been delivered in good condition following normal labours. While a high rate of complications of labour and delivery suggests that trauma and asphyxia during birth are important factors in the aetiology of cerebral palsy, a poor condition of the infant immediately after birth is not necessarily the result of trauma or asphyxia during labour—it might be a manifestation of prior neurological damage.

It is thought that gross trauma in which bruising or laceration of intracranial structures occurs, tends to be followed by death and only accounts for a small proportion of cases of cerebral palsy. There are many reasons for thinking that hypoxia or anoxia during birth is an important aetiological factor. Experimental work and pathological studies indicate that anoxia causes necrosis of nerve cells. Many of the complications of labour which tend to be associated with cerebral palsy are likely to cause asphyxia, for example, prolapse of the umbilical cord, or premature separation of the placenta. A long second stage must involve prolonged pressure on the foetal head which might cause ischaemia and thereby hypoxia.

In view of the relative tolerance of newborn premature infants to oxygen lack this may well not be the mechanism of damage in premature infants. Further, if hypoxia is to be held responsible for athetosis, and symmetrical and asymmetrical spastic cerebral palsies, some selectivity of action under different conditions or at different stages of development must be postulated. However, in spite of this, hypoxia may be regarded as a likely cause of a substantial porportion of cerebral palsy.

Summary

The aetiology of some of the numerically less important disorders included under the term "cerebral palsy", is at least partly understood. Probably less than 2 per cent. is of genetic origin. Because of the use of replacement transfusion there should now be few cases attributable to hyperbilirubinaemia and kernicterus, which up to a few years ago was responsible for about 5 per cent. of all cases. Perhaps 10 per cent. of cerebral palsy dates from an illness accompanied by convulsions in the early years of life, and is probably due to vascular lesions. In something like a fifth of all cases immaturity is an aetiological factor; additional factors may be operative during the early post-natal period.

The aetiology of the remaining two thirds is still largely unknown. Frank birth trauma apparently causes a small proportion. There are many indications that injurious factors during labour and delivery are important, and hypoxia resulting from interference with foetal circulation seems to be the most likely mechanism of damage in many cases.

REFERENCES

BOOK, J. A. (1953), *Acta genet.*, **4**: 345.
DRILLIEN, C. M., INGRAM, T. T. S. and RUSSELL, E. M. (1962), *Arch Dis. Childh.*, **37**: 282.
EVANS, P. R. (1948), *Arch. Dis. Childh.*, **23**: 213.
LITTLE CLUB (1959), *Cerebral Palsy Bulletin*, **1**: 5, 27.
LITTLE, W. J. (1861-62), *Trans. obstet. Soc. Lond.*, **3**: 293.
POLANI, P. E. (1958), *Brit. med. J.*, **ii**: 1947.
LITTLE, W. J. (1861-62), *Trans. obstet. Soc. Lond.*, **3**: 293.

The Medical Referee

by H. STH. VERTUE

When my time came for compulsory retirement, I determined that the fateful journey down the Colonnade should not be for me an easy slope towards Avernus. There some hope to find the greensward and the pleasant places of the Blessed; there I dreaded to be numbered among the insubstantial ghosts, hemmed in by the stagnant pools of Cocytus and the unlovely swamps of Styx. In my search I met with great kindness and unusual luck: I became a Medical Referee. "And what", you ask, "is that?"

A Medical Referee is a servant of an excellent, kind man who suffers rather in the present day from being put upon—John Bull. But John Bull is not without a desire to rid himself of certain parasites that suck his blood, live upon it and render nothing in exchange; and these *animalia dira* are persons who extract from him forms of income mysteriously called "Sickness Benefit" and "Injury Benefit" under a false or mistaken plea that they are too ill to work. He acts through his Minister of Pensions, who, growing suspicious at times, takes up the matter with the Minister of Health, who tells his Divisional Medical Officer (say the Colonel), who tells his Medical Referee (say the Captain), who is detailed to act as the de-lousing officer. ("The parson told the sexton and the sexton tolled the bell.") Rooms for the Referee are provided in convenient place together with equipment and a very important adjunct, a nurse. Her help is invaluable; and besides, nurses are so imbued with the notion of doing good to others that they include the doctor in their orbit of kindness. Another of his pleasures is travelling. From Aylesbury in the north to Portsmouth in the south, from Oxford in the west to Canterbury in the east are about my limits. He can see, too, the whole prospect of Medicine, like Alice when she had climbed to the top of the hill with the Red Queen and stood looking out in all directions over the country. His work is purely clinical, and for that reason is most suitable for men of ripe age, for to them clinical medicine was mother's milk.

The procedure is simplicity itself. When a patient is too ill to work, his family doctor gives him certificates, in exchange for which the Minister of Pensions grants him a certain sum; but the Minister preserves the right to ask for a second opinion after the certificates have been issued for a time; and of the length of time that shall elapse he is sole arbiter. The Medical Referee, whose opinion has now been invoked, may arrive at one of three decisions: (*a*) that the patient is now fit for work; (*b*) that he is still unfit for work; (*c*) that he is unfit for his original work but could do something else. For example, a stoker who has split the annulus fibrosus of an intervertebral disc so badly that he will never stoke again without harm, may well be able to do useful work at a bench. In the last case the Referee goes into it at some length, filling up an admirably devised form that sets out in brief just what the man can do and cannot do; and it is then the duty of the Minister of Labour to find the ex-stoker suitable employment. The opinion of the

Referee is only an *opinion*. It is generally accepted by the Minister, but the family doctor may differ. In that case another Referee's opinion is requested; but by the time a new appointment has been fixed the patient will often have gone back to work. If disagreement persists, there is a tribunal, which gives the final answer. John Bull is nothing if not fair.

I do not *know* that the Minister of Pensions has a little book that tells him just how long an illness may be expected to last, but I suspect that he has; and so, when certificates of pharyngitis or influenza or coryza have been issued for a month or more, he becomes inquisitive. Obsolete diagnoses also attract his attention: I mean such antiquated names as pleurodynia, fibrositis or neurasthenia. Colloquialisms such as "influenzal chill" or "low back pain" have the same effect. He prefers to be told frankly what is the matter, to be apprised of a Pott's fracture or a Colles' fracture rather than to be put off with "Injury to ankle," or "Injury to wrist." To save yourself and your patient bother, make a firm diagnosis and set it down on the certificate: that is my advice. Many men, I think, underestimate the Minister's ability. Is he a mere ass that he should be offered such things as "Hospital investigations", "Post-op. debility", "Post-head injury", "Post-op. myalgia"? Then there are URTI and other things like it. What is URTI? Is it a town in Mongolia or a river in Eastern Siberia? One thing will already have become clear: the better the doctor, the smaller is the number of his patients that are asked to see the Medical Referee, though all family doctors must expect a few calls. Those men whose work I most admire are those with whom I least often have the pleasure of corresponding. Of course in issuing certificates it may sometimes be necessary to hide from the patient the real truth about himself, for which contingency a special form is provided that can be slipped into the pillar-box for the Minister, who will probably then not summon the patient; and on the certificate something vague only need be written.

A form of words often found on certificates, and one that combines amusement with instruction, is "Nervous debility", a translation of neurasthenia carrying us right back to Dr. Max Nordau and Ibsen, to the "alienists" of the last century and notions now meaningless. Let us lift this archaism like a piece of stone and peer at what lies beneath. Here are a dozen cases of "Nervous debility"—No appreciable disease, Female melancholy (see Burton), Inguinal hernia, Diabetes mellitus, Pregnancy, Cerebral arterio-sclerosis (2), Malingering, Simple-mindedness, Bereavement (2), Drink. "Anxiety state" is another meaningless form. "You cannot turn Dama into a freeman", says Francis Thompson, quoting Persius, "by twirling him round your finger and calling him Marcus Dama"; and you cannot turn a state of anxiety into a technical term by omitting a preposition and putting the words in the wrong order. Let us take another sample of a dozen—Aortic regurgitation, Bereavement (2), Menopause, Maidenly timidity, Involutional melancholia, Albuminuria, No appreciable disease (2), Malingering (2), Exhaustion (from tycoons and telephones), and Harry Lauder's syndrome (it's nice to get up in the morning, but it's nicer to stay in bed). Still—if you who read these words are deter-

mined to issue certificates of nervous debility or anxiety state, pray do so. Medical Referees are meritorious men.

Sometimes it is the family doctors themselves that invite the Referee's opinion, thereby finding an opportune way of dealing with obstinate or obnoxious patients; and naturally reports about them arrive. A report is requested too when the Minister of Pensions has been the mover; but only a modest amount of writing is expected, for general practitioners are very busy men. Most of their letters are adequate, some are very good and some are—not very good. I often note that there are men who absolve themselves from further interest in a patient once he has gone to a hospital. A simple syllogism may possess their minds. "When a patient goes to a hospital, he has something serious that is the matter with him. My patient has gone to a hospital. Therefore my patient has something serious." The consequence is that old hands at dodging the Minister, on receiving a summons, ask their doctor for "gastric investigations" or declare that they have frightful pains in their sinuses. The results may be disappointing for them, however, if the Referee whom they encounter is well practised in out-patients, for he knows that the major premise is false. The best reports often include documents from hospitals, usually of interest and value. The worst reports may comprise no more than a scrawl of capital letters, P.O.D., T.I.D., or similar trash. The booby prize goes to superintendents of hospitals, whose score is usually a duck's egg. The Referee in his turn makes a reply and he means it to be polite, adequate and not wasteful of words. He comes fresh to the cases and he can often throw new light on them; but he must be careful about giving advice on treatment: he has not been asked for it.

Dan Leno used to make us laugh with a song about eggs. There were the new-laid egg, the cooking egg and—well, just the egg. So have I seen a woman variously graded as Nervous debility, Anxiety state, Anxiety neurosis, Obsessional neurosis, Psychoneurosis and, well—just Neurosis. Under the jargon lay the plain fact that she was a hypochondriac, one who will manufacture feelings of illness out of her imagination because she wants to be ill. We, who know today how patients wanting to get well can find a remedy in tablets of lactose or injections of distilled water, should have no difficulty in apprehending the converse of that state, when the patient who wants to remain ill affects and is affected by illness.

> *Here in a Grotto, shelter'd close from Air,*
> *And screen'd in Shades from Day's detested Glare,*
> *She sighs forever on her pensive Bed,*
> Pain *at her side and* Megrim *at her Head.*

Hypochondriacs are very common, commoner than malingerers. The latter, rather unexpectedly, are often represented by respectable middle-aged women. After all, it is so much nicer to care for the spouse and children and to run the home than to go on with the daily treadmill at the office or the works, so long as the Minister will provide some pocket-money. But justice must be done between John Bull and this unprincipled female. Next come the confirmed dodgers and shirkers

against whom I record with pleasure Molybdobolismus or Oscillatio Plumbi. Lastly come those, not always of sable hue, who have migrated to this country for what they can get out of it. Most despicable among them I count the low-grade fathers of large families, who do nothing to support them but rely upon National Assistance. Taken as a whole, however, patients are more honest than you might suppose, more honest in the country than in the town. What the extent of the dishonesty would be if the present system were abolished is more than I can imagine.

When I add to what I have said, that another Minister, the Minister of Labour, also comes to us when he wants advice about the capacities of disabled men; no doubt surely, could be felt that the Referee enjoys a wide view of the Medicine and Surgery of the day. Anything and everything may come his way from Schistosomiasis to champagne-bottle legs, from airy-fairy feelings in the stomach and I-simply-can't-go-out-alone to Cockney pluck and the latest ingenuity in artificial limbs. At one moment a moss-gatherer, at the next a bank-manager! The achievements of modern medicine need not take up our time; rather let us glance at a few doubtful places. Physiotherapy in my view is often misused. If only a bottle of embrocation, a strip of plaster, a poultice, a pad of medicated wool would satisfy the throng! Then the physiotherapist should devote her energy to the profitable material, instead of wasting it as she too often does. As a Guy's man I add, too, that I am often shocked at the contravention of Hilton's principle that the best of natural therapeutics is rest, and at the consequences. Then there are three operations that by no means always lead to happy endings—leucotomy (you have guessed that), laminectomy for damaged discs, which needs a master's judgment and a master's hand, and partial gastrectomy. Oh, those lamentable Jack-o'-Lents and scare-crows that have no stomach for the fight! You, who know only the results of partial gastrectomy in your own hospital, have no notion of how ghastly they can be!

The Referee is likely to be dissatisfied as well about the prevailing views on psychiatry. A wise one will know that in a single interview he cannot arrive at any well grounded opinion about a schizophrenic, a paranoia or one of those intractable disturbances of affect that the victim can neither comprehend nor control; but unfortunately what is passed to us as a psychological case is as often as not merely a fault of character; and how should a fault of character be set right by psychiatry? Besides, there is, as any one may see, a challenge there to justice. Actually, however, I have learnt from the patients that very little psychiatry is now used, drugs having supplanted it. Very popular indeed are the tablets and capsules, as many as 30 a day in all sorts of bright colours—shot-gun prescribing.

Black spirits and white, red spirits and grey,
Mingle, mingle, mingle, you that mingle may.

They act upon what Homer called the *thumos*, that which makes us laugh with gladness, sigh with sadness, faint with fear or fill our bosoms with a warrior's courage. They are immensely interesting pharmacologically and they bring us back again to the laboratory. Happy,

happy, happy days they were! Would that Anaxagoras, Empedoiles and the Atomists could have shared them with us! But tablets and capsules are not synonymous with incapacity for work.

With patriotic pride I conclude by announcing that I scarcely ever see a psychological case from our own hospital, though plenty from others. The Minister of Pensions knows a good thing.

Recent Changes in the Wills Library

HOURS OF OPENING. The Wills Library is now open from 9.30 a.m. until 9 p.m. on Mondays to Fridays and from 9.30 a.m. until 1.0 p.m. on Saturdays.

OPEN ACCESS. All books are now on open access, that is, the cases are no longer locked and readers may select books without the intervention of the library staff. Subject guides have been prepared and others are in the course of preparation. It is now *more important than ever* that readers record their borrowings so that the staff may know the whereabouts of books and journals. Many books are in constant demand for reference purposes and it causes much inconvenience to other readers if these cannot be traced quickly. Will readers, therefore, please sign either the book (for library reading) or a borrowers' slip (for home reading) as they borrow books.

PERIOD OF LOAN. Readers are reminded that books borrowed for one evening must be returned promptly the following morning. Only by this can we hope to make sure that popular books are available to everyone. We cannot at the moment afford to duplicate sufficiently to act as a circulating library although we have purchased many additional copies of popular textbooks. We ask, too, that borrowers of journals return these as soon as possible rather than leaving them in their departments laying on benches and shelves awaiting return to the library. We remind members of the Staff that the period of loan is 14 days and we ask that as far as possible this rule be observed. Loans will always be renewed if possible. Long overdue loans cause the library staff much extra work and their time could be better employed in other ways. Writing notes and making telephone calls for overdue books can take up a good deal of unnecessary time which we feel could be much better spent on improving our service to readers.

NEW EXTENSION. A new extension to the Wills Library has been opened in Nags Head Yard. This is available as a reading room for Pre-medical and Pre-clinical students. At the moment no books will be provided there but we hope to do this in the near future. For the time being we suggest that students borrow books from the main library and take them to the new extension. If you do this please fill in a borrowers' slip.

The way to the new library is as follows. From the front hall, turn left into the pathology block and take the stairs to the second floor. Turn right and go past the Blood Transfusion Unit into the new extension. Continue along the corridor to the central stairs. Down the stairs to the first floor and the library is on the left hand side. Students should find that this library is quieter than the Wills Library and that they are less liable to disturbance from other readers. No staff will be on duty for the present time and the same rules will apply as in the Wills Library, that is, no smoking and as little noise as possible. This library will be open from 9.45 a.m. until 6.0 p.m. daily.

SPACE IN THE WILLS LIBRARY. If students use the new library as we hope they will, extra space will be available in the Wills Library. We, therefore, ask that the table by the periodical rack be reserved for those wishing to read current journals and also that the corner at the far end of the library be reserved for people using the various indices and abstracting journals. Because of the space shortage this has often been impossible but from now onwards both these sites will be reserved for their proper purpose.

ANNUAL DENTAL CLINICAL MEETING AND DINNER

2nd March, 1963

The Annual Clinical Meeting at Guy's Hospital Dental School was held on 2nd March, 1963, and, as usual, the proceedings were blessed with a crisp and sunny day. There was an excellent turn-out of Guy's men from all corners of the country to inspect the work of their alma mater.

Demonstrations, presented by all departments, were of three types: operations on patients under general and local anaesthesia; clinical cases under treatment; and table demonstrations. The standard of the demonstrations was as high as ever and attracted as much attention and admiration. Great credit is due not only to the demonstrators themselves but also to the staffs of the Departments of Medical Illustration and Dental Photography.

The morning lecture was delivered by Mr. A. H. R. Rowe, Senior Lecturer in Conservative Dentistry, on Current Trends in Root Canal Treatment. In his lecture which proved to be of outstanding interest, Mr. Rowe reviewed present day methods of root canal treatment and described his own researches. Following lunch Professor Martin A. Rushton gave his traditional lecture "Cases referred by Practitioners" and as usual the Dental Lecture Theatre was filled beyond capacity.

Tea was served in the Prosthetic Laboratory but this year a precedent was created by the provision of apples to compensate for the highly cariogenic carbohydrates.

The Annual Dinner was held in the evening at the Park Lane Hotel, Piccadilly, and the guests attending included, Sir Douglas Logan, Principal of the University of London, Sir Wilfred Fish, President of the General Dental Council, Surgeon Rear Admiral (D) W. Holgate, Chief Dental Officer, the Ministry of Health, the Directors of the R.N., Army, and R.A.F. Dental Services, Mr. D. E. Mason, President of the British Dental Association, Mrs. I. Brook and Mr. D. V. House, members of the Board of Governors of Guy's Hospital, Dr. E. R. Boland, The Matron, Mr. Burfoot, Mr. W. F. Cook, and members of the Medical and Surgical Staff. Since it was the 57th Dinner of the Society the President, Dr. W. J. Tulley, who was in the chair, seized the opportunity to associate it with a well-known firm of food canners. Although the company were spared 57 speeches, there was indeed no lack of variety. The Toast "Guy's Hospital and School" was proposed by Mr. G. H. Leatherman who, speaking of the part Guy's had played in the advance of Medical, Dental and Scientific scholarship recalled the great names who, in the service of Guy's had advanced dental teaching and research. Responding to the Toast, Professor R. D. Emslie succeeded in combining seriousness and satire. In his serious vein he referred to the urgent need for a new Dental School and described the ingenious measures being taken to provide interim accommodation for Staff and Research.

The Toast to the Visitors was proposed by Mr. J. W. Mansie who in his own inimitable style succeeded in extending a warm welcome to the guests without resorting to the usual catalogue technique. In his reply Mr. D. A. Emms, headmaster of Cranleigh delighted all with a speech which explored hitherto unrevealed common ground between schoolmaster and dental surgeon.

Mr. S. P. Johns in proposing the health of the President referred to Dr. Tulley's personal qualities and the great affection with which he is held by colleagues and students alike. In an amusing reply Dr. Tulley took as his Theme, "Something old, something new, something borrowed and something just a little blue". He referred to the 1902 Society Dinner, presided over by the late Col. E. B. Dowsett which took the form of a smoking concert, and made witty comparisons between this and the 57th Dinner. Finally, Dr. Tulley thanked the Secretaries of the Society for their unremitting support during his year of office as President.

The final speech of the evening was given by Mr. C. W. K. Hopkins, secretary of the Society who, despite the late hour endeared himself to the company by proving once again the well known, but rarely practised adage, "Brevity is the soul of wit".

M. N. NAYLOR.

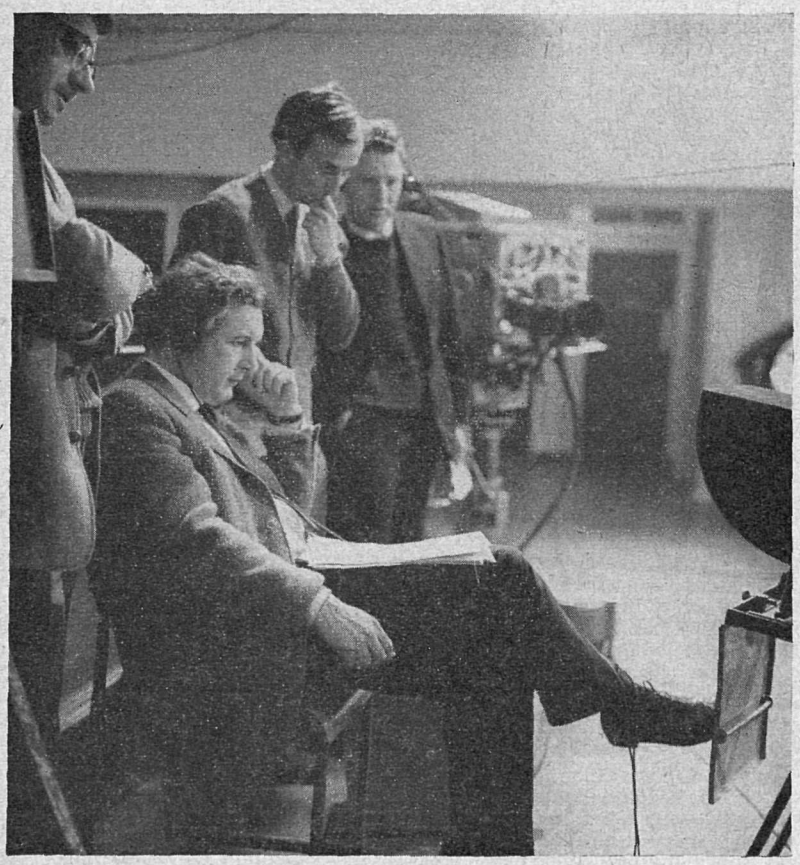
CRITICISM

by SIMON WOOD

TELEVISION—B.B.C. productions from Guy's Hospital in the series 'Your Life in Their Hands'.

— *Appendicitis : February 27th.*

— *Diabetes : March 13th.*



The Guy's gallery of nameless television performers has swelled its numbers once more. In the first of two recent 'Your Life in Their Hands' programmes, The Surgeon (in the mysterious splendour of anonymity), effortlessly removed an appendix and two weeks later the Department of Experimental Medicine mustered a large team (more casual for the use of Christian names) to demonstrate some features of diabetes mellitus, and in a total of 50 minutes, they all contributed

a great deal to releasing medicine from the absurdity and melodrama of Drs. Kildare, Casey, etc.

The programme on appendicectomy was a triumph of television continuity and simply taught the principles of asepsis, theatre routine and basic surgical technique, while dispelling the traditional public impression of taut drama, imminent disaster and frank bad manners. But it did leave one in doubt as to the fate of the appendix: with the resection complete and a purse-string suture explained and inserted, the surgeon announced "my assistant is now going to bury the appendix", probably conjuring up visions in thousands of viewers' minds of a touching and devout ceremony in a corner of the Hospital grounds. This brought a burst of laughter from the large crowd in the College television room, but nothing to equal the reaction to the *Physician's enquiry earlier in the programme: "Tell me about this* washing business".

To explain present theory of insulin action, blood sugar regulation and management of diabetes was an ambitious task and despite ingenious models and apparatus, experimental subjects and a relaxed human atmosphere pervading the top of Hunt's House, the second production was not so successful, largely because of the need to record each smallest sequence separately and the resultant failure to piece it together into a continuous story. Diabetes was introduced as "one of the oldest diseases known to man", thus putting it in rather unfortunate company, but the programme then went on in a vein which promised to educate the stupidest of television audiences: "This patient is a diabetic—that means that she has diabetes". But soon this simplicity gave way to some highly esoteric biochemistry and experimental procedure, and the thread of the programme was lost as unexplained jargon began to fly—"recording galvanometer . . . milligrammes per-cent . . . hypoglycaemia."

The television critics had little to say about this production, possibly because they were left impressed but a little mystified. Not so in the case of the surgical demonstration: this received unanimous approval. The *Daily Telegraph* thought it was "magnificent" but was worried about the results and headed its criticism "HYPOCHONDRIA DANGER". Ever thoughtful, the *New Daily* was not satiated and wanted to know how it was the surgeon made exactly the right depth of incision, and finally wondered "on how many patients beforehand the cameras have to rehearse". The *Daily Mail* critic, on the other hand, was deceived by the surgeon's sleight of hand and deduced that the whole process of appendicectomy "is as easy as sewing on a button". Most expansive of all, though, was the *Observer's* man who confessed that his prose style was inadequate to express "the most poignant moment of all, the first appearance of the intestine". His final remark, however, showed that he was not too completely absorbed in this abdominal revelation to neglect the popular appeal angle—"There was one nurse with an unforgettable pair of eyes, almost as long as crucial incisions"—Guy's it seems will do much to boost the estimated nine million viewers of the series to the 12,400,000 of Dr. Kildare.

CORRESPONDENCE

Letters to the Editor of the Gazette

The Casualty Department

SIR,—There has been some recent criticism in the local press of the administration in the Casualty Department at Guy's involving patients in long delays. As senior dressers working on Front Surgery at the present time, we feel that our views on the cause of the complaints and some possible suggestions for improvement might be of interest.

Although the internal administration of the department leaves room for some improvement, *e.g.*, allowing senior dressers to order ATS and X-rays so that patient and X-ray could be seen together thus saving time, we feel that much of the problem lies in the wide variety of patients who come to Front Surgery for treatment. Many of the patients are not true Casualty cases but include those that could be seen and treated by their own general practitioners, those who should have been referred directly to an Out-Patient Department, and those who have by-passed their family doctors altogether. Although as students we find such variety of patients interesting we feel that if the Casualty Department is to become efficient and delays reduced, some changes are necessary.

The solution of the problem really depends on what service the Department is expected to provide. If as at present a general medical service is expected, we feel that delays even to true casualty cases are inevitable. If, however, a true casualty service is required, we see two possible solutions. First, that "non-casualty" cases without doctor's letters should not be treated in Front Surgery. This would necessitate persuading the patients to go to their own doctors first, and might involve turning patients away from the surgery. It would also entail asking local doctors who use the Department to ensure that "non-casualty" patients are referred directly to the appropriate Out-Patients if a hospital opinion is sought. This system would deprive dressers of seeing a lot of interesting patients which for a teaching hospital might not be advisable.

An alternative system would be the division on arrival of all patients into two groups—"Casualty" and "Non-Casualty". This division could be done by senior nursing staff. The "Casualty" group would be seen and treated immediately, whilst the second "non-casualty" group would be seen only when all true casualties had been treated.

Yours etc.,

R. P. HOLLINGSWORTH
M. P. JEFFERY
F. P. McGINN
R. J. WALDEN

Guy's Hospital, S.E.1.

REVIEWS

METABOLIC INTEGRATIONS.

By P. G. WATSON and D. E. S. TRUMAN. Heffer. 2nd edition, 1961. *Price 6s.*

"Metabolic Integrations" is an atlas of fourteen metabolic pathways. Charts illustrate intermediary metabolism of carbohydrates, fats, amino-acids, purines and pyrimidines. Steroid metabolism is not dealt with.

There can be no doubt that such charts showing metabolic inter-relationships are of considerable value as is witnessed by their presence on the walls of many laboratories. To be of use these diagrams must be crystal clear and they must be accurate. The illustrations in the booklet under review are generally adequate although in some diagrams formulae are in rather small print. However, criticism

of "Metabolic Integrations" must be levelled at the various errors which have remained uncorrected in the text. Thus for example the formula for creatine phosphate is incorrectly represented as containing a N-O-P bond while on chart 11 NADP is reduced to $NAPH_2$. It would be more exact to show nicotinamide adenine dinucleotide as NAD^+ and the reduced co-enzyme as $NADH+H^+$. Kynurenine and its derivatives are misspelt on chart 10 and in the scheme for the β oxidation of fatty acids no mention is made of the key enzyme thiolase whereas all other enzymes concerned with fatty acid catabolism are charted. In chart 6 the decarboxylation of glutamic acid to γ-aminobutyric acid has been omitted, yet this reaction is of considerable biological importance. It is obvious that this atlas cannot be recommended to the readers in its present form. However, the reviewer feels that there is a need for a cheap booklet of this kind and it is to be hoped that the authors will produce a corrected edition of their work at some future date.

A. N. DAVISON.

CLAUDE BERNARD AND THE EXPERIMENTAL METHOD IN MEDICINE
By J. M. D. OLMSTED and E. HARRIS OLMSTED. Abelard-Schuman, 1962. *Price* 21*s.*

Claude Bernard was born in 1813 into a vinegrower's family. Chemist's assistant, poet, playwright, and eventually medical student—he was by no means sure of his future. Stimulated by Magendie and his methods, Bernard's interest in experimental medicine was rapidly awakened. The experimental method, chemistry, physics—each was a new tool—all were used by Bernard in his work. His researches into pancreatic function, sugar metabolism, vasomotor function of nerves, action of poisons, produced many great discoveries as judged by his own criteria, since they gave "rise to ideas shedding a bright light which dispels many obscurities and shows us new paths."

Professor and Mrs. Olmsted have written an exciting story—sympathetic with both the man and his scientific achievement. The book is well produced. To those who do not know of Claude Bernard—and to those who know of him, yet wish to know more—this book is heartily recommended.

ANDREW BOWDEN.

THE FOUNDATIONS OF SURGERY.

By GEORGE PERKINS. Livingstone. 2nd Edition, 1962. Pp. 232. *Price* 12*s.* 6*d.*

This is an attractive little book, with only 232 (5 ins. by 7½ ins.) pages. The publishers, E. & S. Livingstone, have chosen clean paper and clear print, and the book is efficiently indexed and priced at 12/6d.

The author, a true master of orthopaedics has succeeded in writing a fascinating, factual and accurate account of the principles of surgery, with a natural bias toward his pet subject.

Each chapter is accurate and concise and very lucid. Apart from excellent sections on fractures and clinical examination of hip, knee, etc., the book contains useful chapters on coma, head injuries, skin infections, gangrene, burns and aneurysms.

It is hard to find fault with this book. However, on page 178 the author writes "The lymphatics of the testis drain into the pelvis and the lymph nodes are *not* palpable"—what about the para-aortic lymph nodes ? Surely this needs correction.

I wholeheartedly recommend this beautifully written little book to all interested in surgery, and the medical student wanting a simple, concise and trustworthy account of the basic principles of surgery need not look further—it is absolutely essential for finals.

J. M. S. HAYFRON-BENJAMIN.

PYE'S SURGICAL HANDICRAFT. VOLUME II.

Edited by HAMILTON BAILEY and JAMES KYLE. John Wright. 1962. *Price* 40*s.*

Volume II is concerned with the work of the special departments. It is in every way an excellent book and is particularly useful for the house officer and for the general practitioner. Senior medical students and nurses will find it an invaluable reference book, for example, the chapters on assisting at operations and the treatment of venereal diseases contain information not readily available elsewhere. Acute infections and injuries of the fingers and hand and the post-operative care of amputations are especially well dealt with. Mr. James Kyle has further improved a long established and useful work.

I. MCCOLL.

OPERATIVE SURGERY REVISION.

By JOHN J. SHIPMAN. H. K. Lewis. 1962. Pp. 171. *Price* 21*s.*

The undergraduate student will find little to aid him in his Final Examinations in this book for it deals almost entirely with operative technique. Most of the text is taken up with the concise description of 190 commonly performed operations, including some orthopaedic and neurosurgical procedures, although indications and contraindications are occasionally included. Some of the operations fall wholly within the province of specialists and are therefore only treated in outline, but routine operations such as radical mastectomy, sub-total thyroidectomy, cholecystectomy, repair of inguinal hernia and many others are considered in greater detail.

The steps involved are clearly tabulated in note form and those which are apt to be forgotten, or are especially important, are marked with an asterisk. Useful hints and notes on post-operative care are included where indicated. The print is clear, the arrangement excellent and the index is comprehensive, there are no illustrations.

Although this book is intended to assist in the revision for fellowship, the clear and succinct accounts should be appreciated by any aspirant surgeon—even a senior dresser who will find that it can serve almost equally well as an introduction to operative surgery.

J. A. CLARKE.

LECTURE NOTES ON PSYCHOLOGICAL MEDICINE.

By T. FERGUSON RODGER, I. M. INGRAM, G. C. TIMBRAY and R. M. MOWBRAY. E. & S. Livingstone, 1962. *Price* 7*s.* 6*d.*

This is a short, cheap paperback, 100 pages long, with big type and written in concise note form. As such it is unique and very welcome in the field of psychiatric literature.

It takes the form of twenty-three lectures, ranging from "the Psychiatric Interview" to "Experimental Psychiatry". Drug treatment is considered in detail, with special notes on Psychiatric Emergencies.

Descriptions of the Mental State in the Neuroses, Affective disorders, etc. . . . are well tabulated, clear and deceptively thorough.

The Organic States receive emphasis. As this is a book for the novice who will probably later practise General Medicine this is one of its most valuable sections. The symptomatology is stated simply but precisely, with differential diagnosis and an extensive list of possible causes (including Jakob-Creusfeld disease ?)

For the benefit of the potential General Practitioner it is perhaps a pity that this book did not discuss the Neuroses in greater detail, as we are led to believe that this takes up 30-70% of his practice. But the art of effective psychotherapy probably cannot be learned in 100 pages for 7/6d.

Any doctor who familiarises himself with this book will rise above the level of his less fortunate colleagues' usual dismissal :

" *Nutty as a fruit cake ; please see and advise.*"

A. Y. COXON.

MIDWIFERY—PRINCIPLES AND PRACTICE FOR PUPIL MIDWIVES.
By R. CHRISTIE BROWN, DONALD FRASER and RICHARD H. DOBBS. Edward Arnold. *Price* 37*s.* 6*d.*

A new edition of an old extablished textbook is always welcome and *Midwifery* by R. Christie Brown is no exception. The book has been given a new look with a new format and plates and its dimensions are a little larger and unfortunately the price has increased.

The text has been brought up to date where necessary and is an excellent guide to all aspects of midwifery for the midwife. It is, however, a pity that the chapters on chemistry, general anatomy and physiology which made up Part I and Part II of the previous editions have now been omitted. Although they were perhaps, outside the scope of a midwifery textbook, they were an asset and I feel that "Christie Brown" is not quite the same book without them, as they were excellent revision for the State Registered Nurse doing her midwifery and a complete textbook for the untrained candidate, many of whom undertake midwifery training. According to the preface the contribution of one of the previous authors—Barton Gilbert—has been omitted which is perhaps the explanation of why this valuable material has been left out.

Apart from this criticism and the rather arbitary statement that pulling on the cord to deliver the placenta is a dangerous practice and is never done in present day midwifery, this new edition will prove a valued aid to the pupil midwife and the midwife teacher.

B. N. STEVENSON.

NOTICES

MEDICAL ASSOCIATION FOR THE PREVENTION OF WAR

The Third Conference on THE PATHOGENESIS OF WAR is to be held at Selwyn College, Cambridge, from Friday 19th to Sunday, 21st July, 1963. Conference booking Secretary: Mrs. Edwards, "Downside", Park Prewett, Basingstoke, Hants.

N.B.—Proceedings of the Oxford Conference are being published by Messrs. H. K. Lewis and Co. Ltd.

THE '50 CLUB

The Annual Meeting of the '50 Club has been arranged for Saturday, 20th April, 1963, at The Anchor, Bankside, S.E.1.

Details will be posted to members later. Please make a note of the date.

P. F. P. LANSDOWN.

Guy's Hospital East Anglian Dinner, 1963

The Guy's Hospital East Anglian Dinner for 1963 will be held on Saturday 20th April, 1963, at the Royal Hotel, Norwich.

President — DR. W. WARNER COOK.

Guest of Honour — MR. W. M. MOLLISON, C.B.E., M.Ch., F.R.C.S.

Any Guy's man in East Anglia who would like to attend this Dinner and has not yet received an invitation, should contact Dr. A. Batty Shaw, at 41, Newmarket Road, Norwich.

SPORT

BOXING

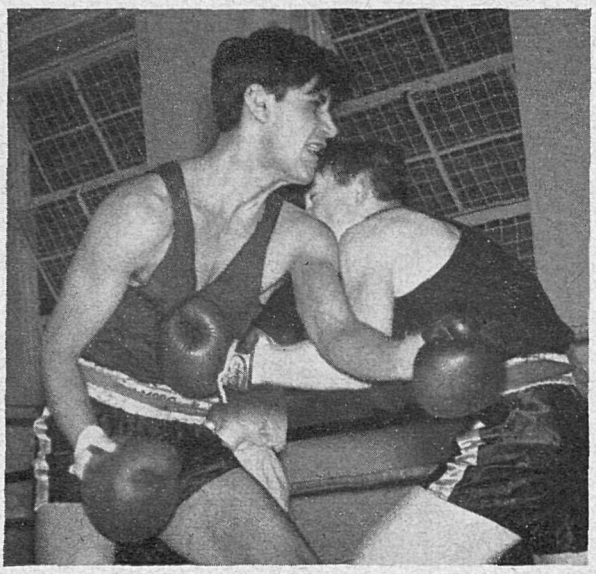
The Boxing Club has retained the United Hospital's Challenge Cup, which it has held every year since the war, except 1955. On the evening of Friday, 15th March, at the University of London Union twenty members of the Club took part in this competition, collecting eight titles and being runners up in three finals. The club beat the only other competing Hospital, St. Mary's by a clear points margin.

Welter-weight
Semi-Final

J. Zadeh (*L.*)

v.

T. Gibson (*R.*)



In this year's Championships, four members of the Hospital received titles by walk-overs. They were P. Barrs, J. Weedy (*flyweight*), E. Dziewanoski (*feather-weight*) and the Hospital's captain, B. Taylor (*light welter-weight*). A particular disappointment to the crowd, as well as to himself, was the walk-over given to D. Edgar in the lightweight final. His opponent was forced to withdraw with a damaged hand. Edgar, who had had a bye to the final, had recently boxed his way to the second round of the U.A.U. Championships and also beaten the Sandhurst lightweight champion whilst boxing for London University.

The mostly keenly contested titles of the evening were those of light middleweight and welterweight. B. Penhall retained his light middleweight title with a fine display of experienced boxing. In his first round contest against B. Hartley (Guy's), he kept his eager opponent at a distance, until in the second round a solid right hook put his man down and the referee stopped the fight. A similar blow dealt with an elusive St. Mary's opponent in the semi-final. The final was an all Guy's affair. Penhall met M. Murray. The shorter, stockier Murray forced the pace in the earlier rounds and scored to his opponent's body. But, in the final round, Penhall opened out and took the fight, scoring with several good straignt lefts to the head.

Murray had been more reserved in his earlier bouts. In a first round contest, Murray waited until the second round before his first attacking punch, a right hook to the jaw, put his St. Mary's opponent on the canvas. In his semi-final against J. Crawford (*Guy's*) Murray gained a points victory, in a contest with few scoring punches.

The welterweight competition presented a much improved J. Zadeh boxing his way through three contests to the final. His semi-final bout against T. Gibson (*Guy's*) was one of the best contests of the evening. In the first round Zadeh used his longer reach to advantage and scored frequently to the face. Gibson used his arms and feet well in defence and in the second round slipped under the reaching gloves of Zadeh to attack his body. Gibson kept up this body attack in the final round, but Zadeh came back with several well-timed rights to the face and was awarded a presumed narrow points victory. In the final of this weight, a single straight right to the body, so winded his opponent R. Robinson (*Guy's*) that the referee stopped the fight. Robinson, in his semi-final, had C. Durant (*Guy's*) twice down for the count before the referee intervened.

Guy's eight title was won in the only heavyweight bout of the competition, when A. Stansfield's opponent from St. Mary's was disqualified in the second round for persistently using the inside of his glove. This stoppage probably made little difference for the robust, eager Stansfield had already put his bewildered opponent down on two occasions.

With Murray and Robinson, the third unsuccessful Hospital finalist was W. Omyema in the middleweight competition. Omyema would not be rushed in his first contest against a St. Mary's boxer but waited his opportunity to score with straight lefts to the face. After three well-boxed rounds he gained a clear points victory. This control was lacking in his approach in the final, however his St. Mary's challenger led him into several scrappy mauls and few scoring punches were seen. The title was lost on points.

Seven Guy's contestants were defeated in first round bouts. R. Kerner and C. Boxall found their two St. Mary's opponents too strong and M. Loader was outclassed by an experienced Hobart of K.C.H.—all in the light heavyweight class. C. J. Wright (*middleweight*) and K. Hughes (*lightweight*) took their opponents to three rounds, but in both bouts the Guy's boxers tired quickly and conceded points. B. Hartley (*light middleweight*) and C. Durant (*welterweight*) were beaten by Penhall and Robinson, respectively.

RUGBY

On a wet, windswept pitch at Nuneaton, the fifteen again failed to break its run of defeats. Playing with the wind in the first half, the Hospital's handling and kicking was unsure and the only score came from a penalty, kicked by Edgar. In the second half Nuneaton used the wind more effectively taking the lead with a goal and a penalty goal.

Facing the strong Gloucester pack on the following Saturday with a weakened fifteen the Club's chances seemed hardly easier. C. J. Wright substituted for an unfit Kerner on the left wing and Boyd moved to scrum-half in the absence of Bevan. R. Hollingsworth came in at fly-half. In the pack, J. E. Davies replaced J. Hockey, who was unavailable. A further change was enforced at Gloucester when it was found that Myall had been delayed in Birmingham and the reserve full-back of the home club filled the gap. In spite of these difficulties, the fifteen surprised themselves and their opponents by winning a large share of the ball and in holding a territorial advantage for most of the game. But, with annoying recurrence, elementary mistakes, as in previous games, allowed our opponents to score and our attacks to flounder. Gloucester had scored a goal and two tries by half-time and increased their lead by an interception and conversion in the second half. The Hospital's front and second rows worked hard throughout and Hollingsworth was particularly energetic at fly-half. Lloyd-Edwards capped a game of much valuable covering with a splendid individual try, dummying his way through several defenders.

SQUASH

The Squash Club has had for the most part a successful season. One notable failure occurred in the semi-finals of the Inter-Hospitals' Cup, when the side went down by four matches to a fitter and quicker St. Thomas's team. In the Cumberland Cup competition, however, the club has done better than for several seasons. Previously facing relegation, the Club has this season finished third in the Third Division, having won the last five fixtures. D. J. H. Richmond (*capt.*), G. M. Davies, P. F. Sievers, C. Chantler and W. A. Norman have regularly represented the Hospital in these matches.

CROSS COUNTRY

The final race of Division I of the University of London League was run at Petersham over a five and a half mile course. M. Hutchinson was the first Guy's runner home in fourteenth position in a time of 30 mins. 25 secs. The remaining five Hospital competitors finished within the next four minutes, but, with the exception of D. Cooper, who was twenty-second, they were all down in the field. The Hospital finished in sixth position and also in sixth position in the league, thus avoiding relegation.

Hospital runners recently took part in the Hyde Park Road Relay race, coming in 58th in a large field.

FOOTBALL

The 1st XI lost, unexpectedly, by two goals to one to The London Hospital in the Semi-Finals of the Hospitals' Cup. The side rarely showed the form which has won this season's succession of victories and only a fine shot by R. Shepherd from a pass by J. Cutler successfully concluded an attack in this disappointing game.

The 2nd XI, the holders, were knocked out of the London University Reserves' Cup, 3-2, by Sir John Cass College.

HOCKEY

In a hard and fast game against The London Hospital in the Semi-Finals of the Hospitals' Cup, the 1st XI went down, 1-2, after extra time. A report appears below. The 2nd XI await their Junior Cup semi-final against Middlesex Hospital.

SHOOTING

The Rifle Club having beaten St. Mary's 'A' recently went on to beat Westminster, whom before the match occupied third position in the U.H. League, one place higher than Guy's. In a return match with Westminster, however, the Hospital lost by 478 points to 480 and Westminster moved up to second position, leaving Guy's third in the final placings. This is the same position in the Small Bore competition that the Hospital held last season.

The 'B' team have been more successful moving up from fifth position to third position this season.

P. L. Jordan and M. Thomson have represented the Hospital in all eleven U.H. matches this season, D. Wardle has also shot for U.H. on two occasions. Individual averages are recorded below.

ROWING

Two of three Head of the River events this year, at Cambridge and Bedford, have been cancelled and the University of London race rowed from Mortlake to Putney early in March was hampered by the weather. Sickness also hit the Hospital's crew with P. D. Venning being forced to withdraw. C. D. Hawes moved up to stroke, where he gave a creditable perdormance and I. MacLennan came in at No. 6. The VIII started tenth of twenty-four crews and improved its position to seventh at the finish. The course was covered in 20 mins. 43 secs.

The 2nd VIII contained several inexperienced oarsmen, but well coached by their captain, R. Forest, they finished nineteenth.

IAN BAKER.

Reports and Results

SHOOTING

Match Record

'A' Team, Shot 7, W. 5, L. 2.
Points Aggregate 3356

'B' Team, Shot 6, W. 3, D. 1, L. 2.
Points Aggregate 2654.

Averages—Small Bore, Season 1962-63

M. Thomson	—98.42	D. Leiberman	—90.4
P. L. Jordan	—96.28	A. Kumar	—88.8
D. Wardle	—95.28	T. Martin	—86.4
R. Ringrose	—95.28	N. G. Daws	—85.0
R. Jenkins	—93.2		

HOCKEY

Inter-Hospitals' Cup Semi-Final—Guy's v. London

AT H.O.P. 6th March, 1963

Result—Lost 2-1

Deprived of Hockey since 15th December it was not ideal that the first eleven should be thrust straight into a cup game for the re-commencement of the season. However, the London Hospital had suffered similarly and so both teams were short of match practice.

From the start, The London swept into attack and only two daring and timely saves by Hirst prevented a score. Gradually Guy's settled down and after prolonged pressure a London defender booted a flick shot off the line. Unbelieveably the umpire awarded a penalty corner; a light let off for The London. A disallowed goal either way kept the score sheet empty and play continued fast and tense. The Guy's defence played brilliantly with Haynes superb at left back. It was not until ten minutes before the interval that Guy's opened their account with a quickly taken free hit on the left of the circle, which found Appleby nicely positioned to place the ball cooly past the goalkeeper.

The second half continued at a cracking pace with some exciting, if not attractive hockey from both sides, and after eight minutes play The London equalised with a well taken goal by their right wing who nipped in between the backs and advancing goalkeeper to push the ball home. The Guy's defence continued to play well and with the attack finding one or two holes in The London defence the game was wide open. Two opportunities to score went astray and at full time the score was 1-1.

An exhausting period of extra time ensued and with the final whistle only 30 seconds away Lawson scrambled in a winning goal for The London. Perhaps a slightly unjust result but that's how the game goes.

Team : A. Hirst; D. Loader, K. Haynes; J. Crafts, M. Conybeare, C. Brooks; J. Gill, M. Appleby, J. Thomas, R. Strickland (capt.), J. Varnes.

RICHARD STRICKLAND

SQUASH

Cumberland Cup Match v. The Cumberland Club played on Tuesday, 19th February

Result—Won by 3 matches to 2. Away

D. J. H. Richmond beat N. J. Faulks 9/5, 9/4, 9/7.
G. M. Davies beat J. W. Jeffrey 9/4, 10/9, 3/9, 10/9
P. F. Sievers lost to P. G. Watts 7/9, 4/9, 3/9
C. Chantler lost to R. G. Pendred 4/9, 9/4, 4/9, 7/9
W. A. Norman beat R. P. Broadway 7/9, 5/9, 10/8, 9/4, 9/3.

Semi-Final Inter-Hospitals' Cup v. St. Thomas's Hospital, played on Wednesday, 20th February

Result—Lost by 4 matches to 0 Away

D. J. H. Richmond v. I. R. G. Dowdeswell, 2-2 (unfinished)
C. Chantler lost to B. Webster, 2-3
W. A. Norman lost to B. Preece, 1-3
T. Huins lost to G. Shackel, 0-3
M. Elliott lost to B. O'Meara, 2-3

Cumberland Cup Match v. Priory S.R.C., played on Tuesday, 26th February

Result—Won by 3 matches to 2 At Guy's

D. J. H. Richmond lost to R. L. Lees, 6/9, 7/9, 10/8, 7/9.
P. F. Sievers lost to R. M. Cardew, 9/3, 4/9, 7/9, 4/9.
G. M. Davies beat H. Nichols, 7/9, 9/4, 9/7, 7/9, 9/6.
C. Chantler beat T. Waites, 9/3, 9/4, 9/4.
W. A. Norman beat B. Cheeseman, walk-over.

Cumberland Cup v. Beaumont S.C., on Thursday, 28th February

Result—Won 3 matches to 2

D. J. H. Richmond beat P. Collins, 9/4, 9/7, 9/10, 9/10, 9/4.
C. Chantler beat J. Murphy, walk-over.
J. Topham lost to M. Vass, 2/9, 7/9, 10/8, 9/4, 0/9.
J. Hunt lost to R. Bettam, 6/9, 9/6, 6/9, 5/9.
P. Gedge beat J. Maher 9/7, 9/0, 9/7.

FOOTBALL

Semi-Final, Inter-Hospitals' Cup

Guy's v. The London Hospital

At Hale End 6th March, 1963

Result—Lost 1-2

On a windy day but on a perfect pitch Guy's started badly being one down in 10 minutes after bad covering by the defence. The team then settled down to some better football often attacking the London goal. This continual pressure brought Guy's a goal just before half-time, Cutler putting a through ball inside the London back for Shepherd to run onto and score a fine goal from a narrow angle.

This put some confidence back into the Guy's team, but early on in the second half a bad mistake by Parry in goal allowed the London to go ahead once more. After this Guy's continued to press but because of poor finishing by the Guy's forwards and some good goalkeeping from the London No. 1, no more goals were scored and Guy's finished the game a disappointed and dejected side.

The London Hospital won the Cup-Final against The Royal Dental Hospital, 6-1.

Team : G. Parry; P. Sheridan, V. Holden; P. Davies, J. Cochrane, N. Trayfoot; R. Shepherd, E. Elias, J. Cutler, A. Palmer, A. Atkins.

GRAHAM PARRY

CROSS COUNTRY

London University C.C. League

Result—6th position. At Petersham

Team positions:—

M. Hutchinson—14th.
D. Cooper—22nd.
P. Witting—35th.
A. Lakin—37th.
V. Holt—45th.
E. Bowen-Jones—47th.

HOSPITAL INFORMATION

APPOINTMENTS VACANT

GUY'S-MAUDSLEY
NEUROSURGICAL UNIT

Applications are invited for the resident post of **Senior House Officer** for six months commencing 1st June, 1963. The unit which is housed in Maudsley Hospital, serves both Guy's Hospital and the Bethlem Royal and the Maudsley Hospitals. Applications should be made by **6th April, 1963**, to L. H. W. Paine, House Governor and Secretary, Maudsley Hospital, Denmark Hill, S.E.5.

PASS LIST

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Primary F.R.C.S.

March, 1963

J. K. Duff
W. G. Hartfall
W. Holmes
C. W. Jamieson
M. S. Wirk

F.F.A.

January, 1963

R. H. Robinson
J. N. Powell

L.D.S.

First Examination

March, 1963

Anatomy and Physiology

J. H. Siegle
C. J. Skinner

Special Anatomy and Physiology

R. E. Knight

THE CHARLES FORSTER PRIZE IN CARDIOLOGY—1963

The following awards have been made :

S. Talbot — Prize.
H. D. Tunstall-Pedoe — Certificate.

SCHOOL OF PHYSIOTHERAPY

Final Examination of the Chartered Society of Physiotherapy

November, 1962

Barker, A.
Bishop, S.
Boyd, G. A.
Cutting, T.
Hill, J. G.
Long, J. K.
Lund, S. A.
Mortlock, A. L.
Read, A.
Sandison, A. V.

February, 1963

Angus, M. A.
Floyd, A.
Grafton, J. J.
Wheeler, R. J.

Intermediate, November, 1962

Barnes, P. M.
Bates, S. L.
Buchele, M. P. M.
Chapman, C. M.
Cousins, J.
Germanacos, I.
Huggett, M. C.
Moore, M. A.
Rugg, J. E.
Sims, G. M.
Floyd, A.
Grafton, J. J.
Wheeler, R. J.

Preliminary, November, 1962

Broughtwood, H. M.
Bridger, P. A.
Burns, C.
Falconer, A.
Garforth, M. M.
Griffiths, M.
Herbert, M. R.
Hood, B. E.
James, A.
Reeve, J. A.
Wheeler, M. S.
Collen, K. M.
Henchley, Mrs. S. F.
Wells, S. S.

Teachers' Examination Part III

Miss G. M. Murray

NURSING NEWS

Entered :

Sister W. McCurdy to *Victoria.*
Sister J. Middleton to *Nuffield D.*
Sister J. Phillips to *Miriam.*
Staff Nurse A. K. Rogers to *Out-Patient Dept.*
Staff Nurse C. Fletcher to *Cornelius.*
Staff Nurse A. Lindemann to *York Clinic.*
Male Staff Nurse M. Tarrant to *York Clinic.*
Staff Nurse J. S. Roberts to *Theatres.*
Staff Nurse P. Lawrence to *Christopher.*
Staff Nurse M. Edwards to *Esther.*

Left :

Sister R. Price from *Miriam.*
Sister M. O'Sullivan (née Gates) from *School of Nursing.*
Staff Nurse A. Whitehouse from *Out-Patient Dept.*

GUY'S HOSPITAL STUDENTS' CLUB

The following have been elected as student representatives on the Council of the Students' Club for the year 1963-64.

Group Represented

First Year Medical Students :

T. A. Harrison

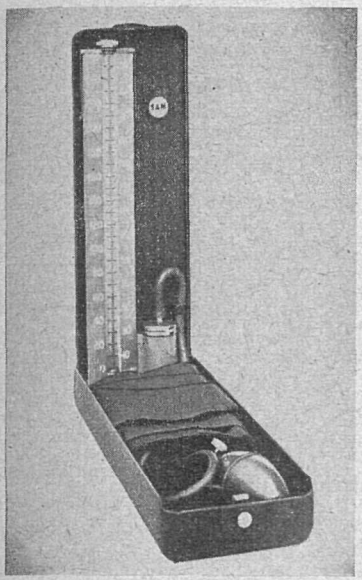
Second Year Medical Students :

W. R. Dunham
J. D. James

Third Year Medical Students :

T. Roe
M. F. Rumpus

SPHYGMOMANOMETERS



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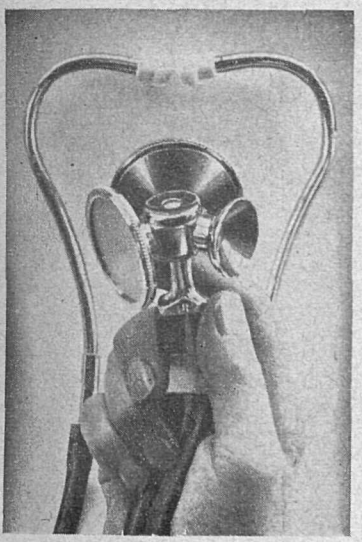

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Clinical Medical Students :
First Year : G. Llewellin, P. J. Rowe
Second Year : R. L. Strickland, M. B. Williams
Third Year : No Candidates

First Year Dental Students :
N. A. P. Thompson

Second Year Dental Students :
Miss J. E. K. Hawley
N. H. James

Third Year Dental Students :
Miss D. B. Morgan
R. F. Stevens

Clinical Dental Students :
First Year K. C. J. Hughes, J. R. P. F. Liddiard
Second and subsequent years D. A. Biggs, C. W. K. Hopkins

Hostel Residents : J. N. Davies

PAPERS BY GUY'S MEN

In order to make this list as complete as possible, Guy's men whose papers have not been noted in this column are asked to send the Editor details of their publication.

Barnes, R. D. S. and Carmichael, D. S. Antinuclear factor and other antibodies in blood and liver diseases. *Brit. med. J.*, 1963, i, 656.

Bass, B. H. Megaloblastic anaemia due to nitrofurantoin. *Lancet*, 1963, i, 530.

Benson, P. F. and others. Vaccination in infancy with oral poliomyelitis vaccine and diphtheria, tetanus, pertussis vaccine. *Brit. med. J.*, 1963, i, 641.

Benson, P. F., Vulliamy, D. G. and another. Congenital hemi-hypertrophy—malignancy. *Lamcet*, 1963, i, 468.

Ellis, F. G. Modern trends in management of genito-urinary tuberculosis. *J. Indian med. Prof.*, 1962, 9, 4072.

Ellis, F. G. and others. Apparent selectice accumulation of testosterone by human breast tissue. *J. Endocrin.*, 1963, 25, 555.

Forrest, J. O. and another. Method of instruction in oral hygiene. *Brit. dent. J.*, 1963, **114**, 163.

Gould, M. S. E. and Picton, D. C. A. Evaluation of a method of measuring forces exerted by the tongue on the teeth. *Brit. dent. J.*, 1963, **114**, 175.

Hamilton-Miller, J. M. T., Smith, J. T. and Knox, R. Estimation of penicillins and penicillin destruction. *J. Pharm. Pharmacol.*, 1963, **15**, 81.

Joseph, J. Electromyographic studies of man's posture, *in Clinical Orthopaedics*, Number 25, 1962.

Joseph, J. Some aspects of the functional anatomy of the foot. *Ann. phys. Med.*, 1963, 7, 26.

Keen, H. and others. Simple method for *in vitro* metabolic studies using small volumes of tissue and medium. *Metabolism*, 1963, **12**, 143.

Kendall, P. H. Local corticosteroid injection therapy III. *Ann. phys. Med.*, 1963, 7, 31.

Lunn, H. F. and another. Towards a medical curriculum for East Africa. *J. med. Educ.*, 1963, **38**, 13.

Neill, D. J. Aetiology and treatment of angular cheilitis—a preliminary report. *Dent. Practit.*, 1963, **13**, 247.

Schurr, P. H. Some late sequelae of head injuries due to road accidents. *Postgrad. med. J.*, 1963, **39**, 149.

Tomkinson, J. S. Cancer of cervix and body of uterus. *Practitioner*, 1963, **190**, 328.

Witts, L. J. Success in medicine. *Oxford med. Sch. Gaz.*, 1963, **14**, 122.

PERSONAL

Special rates for Guy's Staff, Students, Nurses, and Subscribers to the Gazette. 5 words 10s. 6d. 15 words 21s. 0d. Box Numbers 1s. extra.

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CHANGES OF ADDRESS

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Randolph G. Beard, M.Chir., F.R.C.S., "Highdown", 18, The Drive, Banstead, Surrey. Tel. Burgh Heath 1818. *And* 132, Harley Street, London, W. 1. Tel. Welbeck 2296.

Robert Chartier, Esq., L.D.S., R.C.S., P.O. Box 1107, San Jose, Costa Rica.

Dr. R. Elsdon-Dew, Tanglewood, The Avenue, Tadworth, Surrey. Tel. Tadworth 2373.

Dr. W. R. Hain, c/o Farnborough Hospital, Orpington, Kent.

J. E. Lloyd, Esq., L.D.S., 45, Marlborough Court, Pembroke Road, Kensington. Tel. Western 0311.

Dr. D. N. Myers, 5, High View Avenue North, Patcham, Brighton, Sussex. Tel. 52738.

Mr. A. E. Richardson, F.R.C.S., 6, Southwood Avenue, New Malden, Surrey. Tel. Malden 6476.

Dr. John Wolffe, M.R.C.S., B.D.S., Haxted Mead Farmhouse, Lingfield Road, Edenbridge, Kent. Tel. Edenbridge 2159.

BIRTHS

BAILEY.—On 8th February, 1963, at St. Mary's Hospital, Portsmouth, to Drs. Ann and Martin Bailey, a daughter, a sister for Sylvia.

DICKINSON.—On 6th February, 1963, to Janet (née Hutchings, S.R.N.), and Geoffrey Dickinson, M.B., B.Chir., of Frodsham, Cheshire, a sister for Edward and Louise (Emma Katherine).

MARRIAGES

BRIMSON—HUDSON.—On 9th March, 1963, at Holy Trinity Church, Northwood, Flying Officer Clive Brimson to Jennifer Hudson, S.R.N., S.C.M. Present address 1, Espley, Morpeth, Northumberland.

DEATHS

IVE.—On 5th March, at home, Isabel, wife of Oliver Ive (née Davidson, Physiotherapy Department, 1928-32).

EDITORS W. G. REEVES, S. M. WOOD

GUY'S HOSPITAL GAZETTE

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Editors *W. G. Reeves*
S. M. Wood

Sports Correspondent *Ian Baker*

Guy's Hospital, London

PASSIM

Sir William Osler advocated a quinquennial brain-dusting as an essential for all students of medicine, whether veterans or novices. Now it has become even more difficult for any one person to maintain an adequate grasp of current views.

George Eliot somewhat cynically observed :

> "There is nothing quite like the medical profession . . . one can have the exclusive scientific life that touches the distance, and befriend the old fogies in the parish, too".

But it is true that the doctor has the opportunity of being both counsellor and medical scientist in relation to his patients and the medical problems they present. The acquisition of the former attribute seems to be one of the fruits of time, but the latter requires greater industry for its continual growth. Unfortunately, most people are severely handicapped by a lack of time and find it a difficult task to keep abreast of the latest advances in medical research.

A way of catching up with the recent news is to examine the growing ends of research in turn; and we are endeavouring to do this during the next few months by publishing articles on a selection of topics embraced by the general heading of "*A Scientific Background to Clinical Medicine*". It is often felt that there is a great divide between academic medicine and clinical practice and we hope that some of the articles will help to correlate the two and show the applications and significance of some aspects of medical research.

Two distinguished examples from among the many turning points in medical history were the introduction of the Cell Theory by Schleiden and Schwann, and Pasteur's contradiction of the doctrine of spontaneous generation, both of which have provided a foundation for much of our present knowledge. Recently, and at a rather different level, several striking discoveries have been made, including deciphering the genetic code; the recognition of chromosome abnormalities in human disease, and the resurrection of the thymus from obscurity to be given the role of governing the body's immunological mechanisms.

It seems a far cry from the abbot Mendel and his sweet peas to some of the current views ascribing hereditary potentialities to the cytoplasm and even the cell membrane. It may turn out to be true that even Lamark was not so misguided after all, according to one recent protagonist of his views.

The first article in this series, a discussion of some of the basic aspects of genetics, will be found on page 161. This subject has, like so many others, acquired a language of its own and the author has described the method of presenting genetic data in his explanation of the more common modes of inheritance. The current notation may appear intimidating at first sight to those unacquainted with it but in order to review this subject adequately it was felt necessary to incorporate it, especially as it might prove of use for further reading.

Subsequent articles in this series will discuss subjects related to genetics, immunology, cytology, biochemistry, congenital malformations, oncology and statistics.

GUY'S DIARY

APRIL

EXHIBITION. *Bone Tumours.*

8th	M.	1.00	Mr. BEARD, *Operations for Peptic Ulcers.*
9th	T.	1.00	Dr. MacKEITH.
18th	Th.	5.00	*Neurosurgical Round* by Mr. SCHURR. Clinical Theatre.
19th	F.	1.00	Mr. BRAIN. *Certain Interesting Superior Mediastinal Tumours.*
22nd	M.	1.00	Dr. McCONNELL.
23rd	T.	1.00	Mr. BLACKBURN. Clinical Lecture. *The Management of Thyrotoxicosis.*

Neuro-Pathology Demonstrations

Dr. J. B. Cavanagh will be demonstrating current neurological material in the Post-mortem room at 4.0 p.m. on Thursday afternoons.

All who are interested will be welcome, whether pre-or post-graduates. The cases to be discussed will be posted in the usual way.

OBITUARY

Professor Nimr Tuqan

Professor Nimr Tuqan, whose tragic death in an air accident off Beirut was announced on March 15th, will be remembered by many at Guy's as a visiting research worker in the Department of Pathology in 1959-1960.

He was born in Samaria, Palestine, in 1922, and qualified in medicine at the American University of Beirut in the Lebanon. After some years of surgical practice in Saudi-Arabia and Palestine, he embarked on a career in pathology; he trained under Hertig at Harvard and, on his return to the Middle East, was appointed Associate Professor of Pathology at the American University of Beirut. His well-founded reputation as one of the best informed and most experienced pathologists in the Middle East and the wide range of his personal contacts led to great demands on his time and professional services. His particular interest was in the field of thyroid tumours, on which he had written a monograph. Latterly his interests had turned to the histochemical problems of degeneration in connective tissue and arteries—work which he had hoped to continue during a future visit to Guy's.

Nimr Tuqan, who came from a family distinguished for its political services to the Middle East, took an important but unobtrusive part in public affairs in the Lebanon; he was an exponent of progress and modernism in the Middle East, and was the close friend and confidant of many Arab politicians and industrialists of like mind. He and his wife were both actively concerned with improving the quality of university and general education in the Lebanon; he was Chairman of the Alumni Club of the University and a co-organizer of the annual Middle Eastern Medical Assemblies.

His cheerful personality, his generosity, his thoughtfulness for others, his liberal-mindedness and, above all, his vigorous but subtle humour will be as sadly missed by his many friends at Guy's as by his colleagues in Bierut. His premature and untimely death is a distressing loss to the Lebanon, to Arab Medicine and to all who knew him. We extend our deepest sympathy to his widow Souha in her bereavement.

As for myself, all I know is that I know nothing.
SOCRATES

Forthcoming Attractions

by
Professor W. J. H. BUTTERFIELD.

My object is to introduce a series of articles by research workers at Guy's and stimulate you to read them. The trouble is that all of us feel ambivalent towards being educated. It is not surprising that this word ambivalent—having either or both of two contrary qualities—appeared in our growing language as recently as 1921. Most of us feel the stress of being pulled in two directions at once, indeed reconciling ourselves to ambivalence seems to be the burden of the twentieth century—East v. West, monolithic authoritarianism v. the decisions thrashed out from discussions, Arts v. Sciences, our knowledge v. our ignorance.

Let us consider this theme, things having either or both of two contrary qualities, a little further. Take Socrates' famous remark, quoted above. No wonder the practical men of Athens, who had decisions to take, were so vindictive. And, today, how could anyone train medical students starting from this general premise? How would we fare without our systems of facts, our Textbook of Medicine, Shorter or Longer, helping us to make our diagnoses or managing our cases? No wonder they made the Old Man drink hemlock.

And yet, his view was really in complete harmony with the method of science. Our personal knowledge is but a fraction of the "amassed thought and experience of innumerable units" (Emerson). Yet each individual piece of scientific knowledge could only be confirmed where the experimental method could test the hypothesis, in other words, where the possibility of negativity existed. This is the way of the scientist. If he is a good explorer, he must be constructing testable hypotheses: it is for the speculator to devote himself to theoretical reasoning. If the scientist's hypothesis is tested and found

wrong he must set up another. If his hypothesis is not disproved, he must extend it until his tests come up against negativity. So his ideas sprout out and divide like the twigs on a branch, until they are stopped by lack of techniques for testing them. No wonder we talk about trees of knowledge, and no wonder it is growing so fast today; technology permits it.

The fascination about medicine at present, and the biological sciences as a whole, is that we are re-scrutinising a great deal of our information based on opinion—opinion often deduced from personal experience with highly selected clinical material. The excitement of the present situation is heightened because new methods of measurement are becoming available all the time and through statistics logical means have appeared for testing the reliability of information derived from measurements. For those of us who have had the good fortune to be involved, even in a small way, with the developments in clinical science over the last 3—4 decades, there has been the challenge of making experimental observations in our patients. These developments, which have spread out from Sir Thomas Lewis's school at University College Hospital all over the country, have brought a special problem of ethics, in addition to the ever-present difficulties of techniques, team work and expense. Books have been written on each subject. There is no slick answer to the ethical problem : it requires a special alloy of the Hippocratic oath and compassion for the other sufferers of the disease. Physics and Chemistry have provided great technical advances for us this century; electronics, radio-isotopes and plastics. Understanding the psychology of research teams is an essential attribute in scientific leadership today.

The expense of medical research is rising rapidly : in this country from a few £ million/year before the war to about £25m. This is now made up of sums of about £7m. from the pharmaceutical industry, £6m. from the Trusts and the University Grants Committee and £5m. from the Medical Research Council. Expenditure in America is 6—10 times as much, and many £ million/year are involved in Scandinavia, 'The Six', South America, Africa, Asia and Australia. As our societies become more affluent, as mining, oil and engineering relieve the human muscles, we must expect more and more people to seek careers in biological researches—the changing complexities of living material offering a continuous intellectual challenge in contrast to the natural sciences, which always reduce their unknowns because they do not have to contend with evolution. In human biology, there is still an enormous amount to be done. We have not yet completed the assembly of our physiological knowledge about man. And expense will increase because it is much easier to describe without urgency the normal functioning of a biological system—say the transmission of a nerve impulse, or synthesis of a

protein, etc.—than to define, in the clinical situation, which point in the pancreas—say from production of insulin, its distribution, delivery to its site of action and metabolic effect—is causing disease in this man, that woman or child. However, we should not be despondent about the expense, it is negligible; the world total is less than recent estimates for gambling in this country alone.

To come back to Guy's, from its opening in 1725, this hospital has built up its great tradition of clinical care for the patients, the tradition which we cherish most and which must always come first. But, it seems to me, the quality of this care demands that we always strive to improve it, as our forebears did. In the nineteenth century they—Bright, Addison, Hodgkin, Gull, Mohamed, Wilks—gained a worldwide reputation for their recognition and description of diseases, and their correlation with pathological changes. This century has already seen the alleviation of most pain and the control of most bacterial infections. Now we face the grim, drawn-out struggle with the chronic diseases, and with ignorance about health, mental and physical—so well exemplified by the delays which occur too often between women discovering a lump in their breast and going to their doctor. Likewise we must shorten delays between securing new knowledge and using it: this is the general responsibility of the profession, you and me. The numerous symposia and International Congresses aim to disseminate information. These meetings are naturally specialised because those attending want results which will guide their care of patients. The discussions seem detailed, but as our therapeutic weapons are so powerful—like the steroids—ethics demand very detailed knowledge by the users, who need to know the findings at the growing points of knowledge.

The medical student and doctor of today must not allow this expanding new information to drive him, or her, into a depression and apathy. He must be subjected to ambivalence (again!), reassured and stimulated. Reassured that all of us suffer the same overwhelming despair when we compare our ignorance with the number of books in the library, the array of journals, the tons of paper and ink involved. The only method in a crowded 20th century—but longer—life is to examine the growth points of knowledge branch by branch. Time consuming, perhaps, but that is what the Gazette aims to do with a series of articles which will extend over the next few months. How can I stimulate you to carry your Gazette around with you and re-read these pocket-worthy articles? Yes, I know, any one of them may seem impractical and obscure when it comes out. But don't forget: taken all together they will *certainly* improve the quality of your medicine and any one of them may be germane to a particular case. And you may have the pleasure of dazzling someone—consultant, colleague, nurse, even yourself—with your grasp of biology—your general condition!

FUNDAMENTAL GENETICS

by B. J. RICKARD
Department of Biology

The concept of the "gene" is discussed and the gene defined in terms of function, recombination and mutation. Dominant, recessive and sex-linked modes of inheritance are explained. Polymorphic variation in Man is described, and the methods of analysis of continuous (polygenic) variations are touched upon.

The principal advances in genetics that bear upon Clinical Medicine concern the biochemistry of genes, the genetics of micro-organisms, human chromosomal anomalies and the increasing knowledge of genes responsible for the inheritance of defects in Man. The first three of these will be the subjects of other articles in this Series and only certain aspects of genes and of gene mutations in human populations will be touched on here.

Many genes produce clear-cut, noticeable and constant effects. Well-known examples are the alleles determining the *A—B—O* series of antigens on the the red blood corpuscles, and those for albinism and haemophilia. In other instances the inheritance of diseases may be obscured by what appear to be identical results being produced by different types of gene; or by the failure of some genes to give a constant, noticeable effect or even any apparent effect at all in different gene pools or in different environments. Hence the ideas of *expressivity* and *penetrance*. Expressivity is the variance of the effect produced: penetrance is the percentage frequency with which a gene produces any (noticeable) effect at all.

Classical genetics emphasized that gene change equals character change. Implicit in this statement is the idea that every gene produces its effect in concert with all the other genes and with the environment. Beadle's ' one-gene-one-enzyme ' seems at first sight incompatible with this. In 1938 Grüneberg suggested that primary gene action was essentially a unitary function, and the work of Lindegren on *Neurospora*, of Pontecorvo on *Aspergillus* and of Ingram on haemoglobin differences in Man amply supports Beadle's dictum; a particular section of the DNA chain determines that a specific protein, an enzyme, is made. Our knowledge of the more distant effects of genes is scanty; of how presumably identical gene complements in the nuclei of cells of different tissues determine differences in structure and function, is precisely nil. Remote gene effects are like ripples on the surface of water following the dropping of a stone. They are a function of the observer as well as of the gene. Geneticists of some three decades ago invoked the idea of

"alternative reaction systems". Ordinarily a developmental pathway initiated by a particular gene proceeds until the character affected by that gene appears. The rest of the genes "direct" the metabolic pathway by the interactions of remote gene products. A mutation at this locus carries the reaction into a different, *already potentially existing*, pathway. A gene with low penetrance can be thought of as one which does not determine the whole course of the reaction affecting a character. Genes in this sense are "realizers" that bring potential alternative pathways into operation.

A locus on a chromosome is symbolised by a standardised abbreviation of the name of the mutant character caused by a gene change at that locus. A plus sign indicates a non-mutant gene. Thus *pr* in *Drosophila* is a recessive mutant resulting in a purple eye; *pr*+ (alternatively written "$+^{pr}$") is the non-mutant allele *at the locus of pr*. B is the "dominant"* mutation for bar eye in Drosophila, B+ is the non-mutant allele. When the locus under consideration is self-evident the plus sign alone is used to symbolise the non-mutant allele, $\frac{+\ +}{pr\ \ vg}$ is a Drosophila doubly heterozygous for *pr* and *vg* (vestigial) having one mutant and one non-mutant allele at each locus. Each horizontal line represents a portion of an homologous chromosome carrying both the loci concerned. Such a double heterozygote can also exist as $\frac{+\ vg}{pr\ +}$ and the two forms are phenotypically indistinguishable, non-mutants or "wild" types. Very often the second horizontal line is omitted, and to save space in printing the remaining line may be written as an oblique. Thus

$$\frac{+\ +}{pr\ \ vg} \qquad \frac{+\ +}{pr\ \ vg} = + + \ / \ pr\ vg$$

The concept of a "gene" is best defined in terms of function. Generally the alternative doubly heterozygous combinations for a pair of non-allelic genes: $\frac{r_1\ \ r_2}{+\ \ +}$ and $\frac{r_1\ \ +}{+\ \ r_2}$ both show the "wild" (non-mutant) phenotype.

E. B. Lewis, working on *Drosophila*, reported in 1945 a case in which $r_1\ r_2/++$ forms were wild type, but $r_1+/+r_2$ were mutants. Such genes are always very close together and are called position *pseudo-alleles*, $r_1r_2/++$ is called the *cis* configuration, $r_1+/+r_2$ the *trans* configuration. Benzer in 1955 and subsequently, worked on the T_4 phage which attacks *Escherichia coli*, producing plaques. He found that all effective mutants fell into two functional adjacent groups; that double mutants showed the cis-trans effect; and that crossing over occurred between the groups and within the groups. Benzer called each group, the unit of function, a *cistron;* the smallest unit of recombination, a *recon;* the smallest unit the alteration of which causes a mutation, a *muton.* In *Salmonella* and in *E. coli* it has been shown that in addition to the "one-gene-one-enzyme" relationship the sequential order of the

* Bar eye in Drosophila is not a true dominant mutation. It results from the reduplication of a tiny segment of chromosome carrying the B+ locus.

genes corresponds to the sequence of biochemical reactions in a metabolic pathway. The genes responsible for the structure of the enzymes are closely linked to "operator genes" and "regulator genes" in such a way that a segment of DNA chain not only determines the structure of the enzymes but genetically regulates the biochemical process. Jacob and Monod call such a segment of DNA an *operon* which they defined as "the unit of co-ordinated expression, comprising an operator and the group of genes for structure which it co-ordinates". Goldschmidt goes further and regards the whole chromosome as an enormous macromolecule.

Genetics is essentially a quantitative science, and even at an elementary level can indicate how dominant, recessive, intermediate and sex-linked modes of inheritance can be recognized in human populations, the probability of defects being manifest in siblings, and the importance of balanced polymorphic systems in the potential variability of the species.

Autosomal Dominant Inheritance

Human populations are generally, in respect of the genes to be considered, randomly mating populations. That is, *the chances of individuals mating is proportional to the frequencies of their genotypes in the population.* Consider a population in which two alleles are present, r^+ and a rare dominant mutant R. Suppose the relative frequencies of r^+ and R are as p : q where $p + q = 1$. The proportions of the three possible genotypes (r^+r^+, r^+R, RR) in the population will be $p^2\, r^+r^+ : 2pq\, r^+R : q^2\, RR$.* That is, the number of individuals heterozygous for a pair of alleles is twice the product of the square roots of the other two classes, where the total population is taken as unity and the numbers in each of the possible classes of genotype as fractions thereof. This is the simplest expression of the Hardy-Weinberg rule.

$$p^2\, r^+r^+ : 2\, pq\, r^+R : q^2\, RR$$

If p is much larger than q (i.e. the dominant gene is rare) and $p + q = 1$ then very few individuals in a population will be homozygous for R. Almost all affecteds will be r^+R and it will not be possible to distinguish between the heterozygous and homozygous manifestations of the gene since RR individuals will be so very rare. This is true of most clinical conditions due to "dominant" genes in Man. In the absence of homozygous expression such genes would better be called "non-recessives".

Rare autosomal dominants are the easiest genes to identify in human populations. As affecteds will be heterozygotes, and their frequency in the population is low, they will usually marry homozygous normals. The offspring of such marriages will show (statistically) a 1 : 1 ratio of affecteds to normals, and except for rare cases arising by mutation every affected individual will have one affected parent. Normal children of $r^+R \times r^+r^+$ marriages marrying normal partners will have only normal children.

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* This represents a stable condition and the genotype frequencies will remain in eqilibrium unless disturbed by mutation, selection, migration or sampling errors.

These criteria allow conditions such as brachydactyly, anonychia and acholuric jaundice to be recognised as showing dominant transmission, but single pedigrees should not be relied upon. With genes of rather higher frequency the homozygous dominants must be included. For a commonly occurring character such as taste-capacity for phenylthiourea the agreement between theoretical and observed frequencies is good. For semi-rare genes agreement is not so good because mating is probably not strictly random in such instances. In achondroplastic dwarfism, for example, there is a tendency for both parents to be phenotypically alike, reflecting a general similarity of genotype (positive assortative mating).

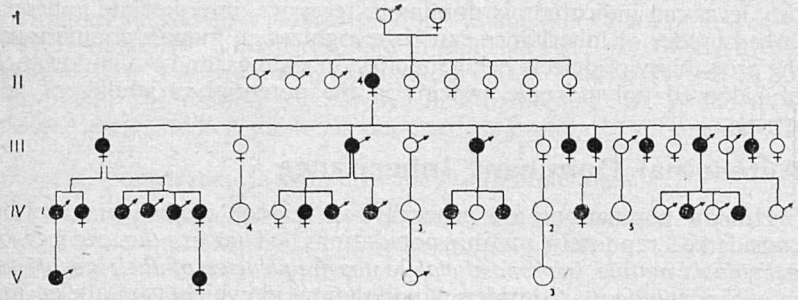

Figure 1. Pedigree illustrating the occurrence of a mutation yielding an abnormal dominant gene, which has thereafter been regularly transmitted to further generations. *Piebalding.* (Keeler).

Abnormalities resulting from dominant genes "run in families", occurring regularly in some members of each generation, statistically in a ratio of 1 : 1 affecteds to normals. With genes of low penetrance the proportion of affecteds among the children may be much less than expected and may even be nil in a particular generation. A test of the significance of the divergence from the 1 : 1 ratio is easily done by the application of the χ^2 distribution applied to an expectation of equal numbers in each of two classes. When the available data are small or when low penetrance disturbs the 1 : 1 ratio of affecteds to normals a different test is needed. A dominant gene of low penetrance may be distinguished from a recessive by a test devised by Levit in 1936. With a dominant gene most marriages between affecteds and normals will be $r^+R \times r^+r^+$. If the penetrance remains constant the ratio of affecteds to normals will be the same among the parents, sibs and children of affected individuals; half this proportion among the uncles, aunts, nephews and nieces, and a quarter amongst their first cousins. (With a recessive gene most affected × normal marriages will be $rr \times r^+r^+$ and there will be no affecteds among the offspring nor amongst the parents of affecteds.)

Autosomal Recessive Inheritance

For a rare recessive gene "*r*" the three classes of genotypes at equilibrium are:

$$p^2\, r^+r^+ : 2\,pq\, r^+r : q^2\, rr.$$

As *p* is very much larger than q and approximates to 1 this can be

written 1 r^+r^+ : 2u r^+r: u^2 rr where "u" is substituted for, and approximately equals q. If "r" is rare u is small and u^2 very small. Thus $r^+r \times rr$ marriages will be very rare, occurring with a frequency of $2u^3$. Almost all affected individuals (rr) will result from $r^+r \times r^+r$ marriages which will occur with a relative frequency of $4u^2$. Thus affecteds usually have phenotypically normal parents, marry homozygous normals and have no affected children: $r^+r \times r^+r$ marriages will produce (statistically) affecteds to normals in the ratio of 1 : 3. Conditions resulting from recessive genes do not appear, therefore, in every generation, but sporadically, and then disappear again.

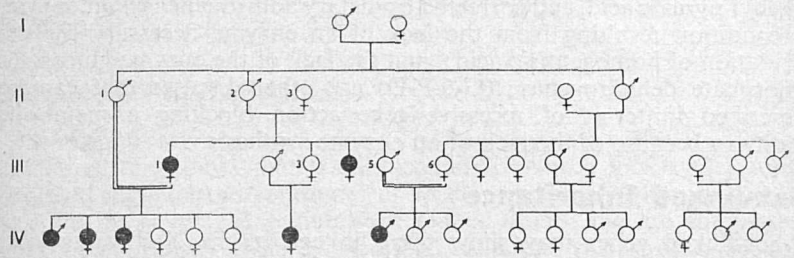

Figure 2. Pedigree illustrating how consanguineous marriages may increase the frequency of occurrence of a recessive trait in a family group. *Albinism.* (Pearson, Nettleship, and Usher, after Tertsch).

Natural Selection acting upon a population cannot act directly upon genes; it acts upon phenotypes until an equilibrium is reached with respect to mutation, selection and fitness. For this reason the frequencies of the *phenotypes* determined either by dominant or by recessive genes in human populations are generally comparable and lie broadly between 1 in 10,000 and 1 in 100,000. *Gene* frequencies, however, are very different. If a recessive disease has a frequency of 1 in 10,000 the gene frequency will be 1 in 50! The genes responsible for rare recessive conditions in human populations are thus widely spread, and probably most individuals in a population are heterozygous for some of them.

Recessive genes cannot usually be identified in heterozygotes and the occurrence of an affected individual from marriages of non-related persons is unpredictable. The 1 : 3 affected to normal ratio among sibs of an $r^+r \times r^+r$ marriage is subject to much error. With small families many such marriages will produce no affected children at all, and statistical methods of correction for such errors are complicated. The easiest test for a recessive gene is the relative increase in the proportion of cousin marriages among the parents of affected children. An affected will usually be produced by $r^+r \times r^+r$ marriages. If "r" is rare then r^+r spouses will also be rare. Every r^+r person has received the "r" gene from parents (and grandparents) who will have passed it also to some of that person's collaterals. Cousin marriages therefore increase the chance of $r^+r \times r^+r$ marriages. First cousins share one eighth of their genes in common. When an r^+r individual marries a first cousin the chance of that cousin's also carrying the

gene is therefore 1 in 8. In contrast the chance of unrelated persons in a population marrying and both carrying the gene is $4u^2$ (the square of the heterozygote frequency).

Many recessive genes in Man have very severe effects because they are protected from selection pressures whilst in the heterozygous state. One such gene is responsible for fibro-cystic disease of the pancreas, another for phenyl-ketonuria. Phenyl-ketonuria occurs about once in every 40,000 births. In the homozygous recessive the enzyme phenyl-alanine hydroxylase is not formed in the liver and the disturbed protein synthesis interferes with normal brain development and mental defect results. The condition can be diagnosed by testing the urine for phenyl-pyruvic acid, and corrected by dietary adjustment. Alkaptonuria, a condition resulting from the lack of an enzyme necessary for the oxidation of homogentisic acid; and the lack of the enzyme glucose-6-phosphate dehydrogenase (G-6-P-D) are other diseases that can be described in terms of recessive gene action blocking a metabolic pathway because of the lack of an enzyme synthesis.

Sex-linked Inheritance

Sex-linked genes may show total linkage in the X-chromosome; total linkage in the Y; or partial linkage, being in the pairing portions of the sex chromosomes in which case crossing over can occur between them. Most sex-linkage in Man is total sex-linkage in the X-chromosome. Genes such as those responsible for red-green colour blindness and for haemophilia are of this sort and this type of sex-linkage has long

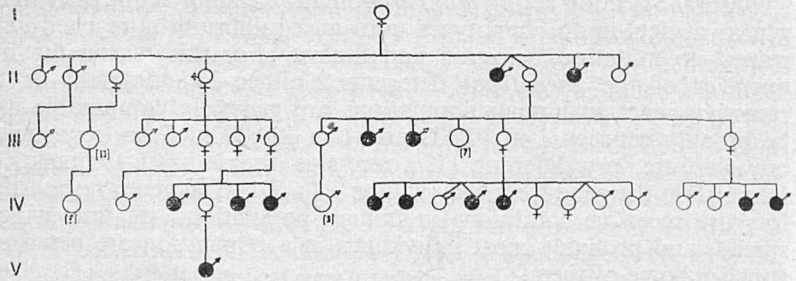

Figure 3. Pedigree illustrating the characteristic nature of recessive, sex-linked transmission. At one time the only known instance of *Microphthalmia* due to a recessive, sex-linked gene (Roberts).

been well-known. Since for such genes there are no corresponding (normal) alleles in the Y chromosome the genotype frequencies in a randomly mating population will be $p^2\, r^+r^+ : 2pq\, r^+r : q^2\, rr$ in females and $p\, r^+ : q\, r$ in males. For a recessive gene the ratio of affected males to females is thus $q : q^2$ or $1 : q$. With the gene frequencies encountered this means that affected males will usually be *several thousand times* commoner than affected females. Conditions due to sex-linked genes are thus generally found in males and transmitted through normal females.

These criteria apply also to sex-limited characters such as hypospadias. Sex-linked characters, however, are very rarely passed from

father to son (by marriages between an affected man and a heterozygous woman) and appear, if only very rarely, also in women. Genes totally sex-linked in the Y have been described (the "porcupine man" and webbed toes) but such transmissions are susceptible to other and possibly more likely explanations. Partial sex-linkage in Man is well authenticated, one of the best documented examples being that of xeroderma pigmentosum. Crossing over between the pairing portions of X and Y results in a lack of any association of the condition with sex when a population sample is considered as a whole. Association with sex can be detected, however, in single pedigrees; in some families there will be an excess of affecteds among boys, in others among girls. McKusick has recently reviewed fully the genetics of the X-chromosome of Man.

Balanced Polymorphism

Gene mutations are rare events. The mutation rate varies at different loci on chromosomes, but is characteristic for each locus. Selection pressures regulate the genotypes of species, including Man, in such a way that most recurrent mutations reduce fitness and are eliminated from populations. Where, therefore, different forms of a species exist side by side in the same environment and the frequencies of these forms in the population is constant, it follows that there must be some selective advantage in each class of genotype, and that these are held in constant proportions by the various selection pressures acting on the population. Such an arrangement is known as *balanced polymorphism.** Well-known examples in Man are the various blood groups, *A-B-O*, Duffy, Kell, etc. and the occurrence of *A-S-C* haemoglobins in African negroes. The proportions of the *A-B-O* blood group classes differ very little in Western European populations. Among the gypsies of Hungary the group frequencies are very different from those occurring among the Hungarians but closely approximate to those of the Hindus. Evidently the stability of the blood group frequencies in different races has arisen in evolution in response to different selection pressures and is of ancient standing. Even today persons belonging to different *A-B-O* groups show differing susceptibilities to certain diseases, such as, for example, duodenal ulcer.

The occurrence of *A-S-C* haemoglobins in Negroes is particularly interesting. Individuals homozygous for the mutant gene determining the *S*-type haemoglobin usually die from sickle cell anaemia in childhood; heterozygotes show sickle cell trait and have a positive selection value (advantage) over homozygous normals in being more resistant to malignant tertian malaria. This maintains a very high frequency of a gene (about 40% in West African Negroes) which otherwise would rapidly be eliminated from the population. Genes that manifest themselves in heterozygotes in a condition intermediate between those of the homozygous dominant and recessive present what is known as *intermediate inheritance.* *C*-type haemoglobin is determined by a different mutant gene at the same locus as that responsible for haemo-

*The percentage of the least frequent genotype must be such that it cannot be so maintained by recurrent mutation.

globin *S* and haemoglobin *A*. Persons heterozygous for it show *Hb-C* trait, homozygotes *Hb-C* disease. A series of more than two genes occurring at the same locus constitute *multiple alleles*. The *A-B-O* groups are also determined by multiple alleles.

It is not always possible to trace the particular selective advantage associated with such genes. Thus the high incidence in parts of Italy of a deleterious gene producing thalassaemia minor in heterozygotes and Cooley's anaemia in homozygotes is not explicable on this basis. The dimorphism of tasters and non-tasters of phenyl-thiourea throws some light on such cases. This dimorphism for an apparently "useless" gene is found also in anthropoid apes, who show approximately the same proportions of tasters and non-tasters and the same level of taste-ability (50 parts per million) as Man. Such a long-standing balanced system, argues the existence of some selective advantage, albeit as yet undetected.

Polygenic Inheritance

Two sorts of variation have so far been considered, one due to single, rare, gene mutations which were either dominant or recessive, the other to commonly occurring, alternative genes resulting in balanced polymorphism. Very many characters in Man do not show the clear-cut type of variation associated with gene segregations of this type. Such a character is height in Man, which shows *continuous variation* from the tallest to the shortest. In such instances many genes, instead of a pair of alleles, are involved. Such genes segregate in accordance with Mendelian principles, but as the effect of each gene is small compared with that of the rest of the genes involved such segregations cannot be detected by simple inspection. Where genes affect a single character in an additive way they are called *polymeric genes*. When the number of genes in a polymeric system is large, and each has relatively little effect, the system is called *polygenic*. In controlled animal and plant breeding systems polygenic variation shows itself by a first filial (F1) generation that is intermediate between the two extreme conditions of the parents, and a second filial (F2) generation that shows a continuous variation from one extreme type to the other. The extremes are the least frequently occurring in such an F.2., the intermediates much more frequent, reaching a peak at the mean, the frequency diminishing on either side. This is the Gaussian or normal curve of distribution. The frequency distribution of the genotypes in the F.2. of a polymeric system in which the number of alleles is known can be analysed by the application of the binomial theorem, but is beyond the scope of this article.

Most "normal" variation in human populations is continuous variation. Attempts have been made to assess the relative contributions of heredity and environment in such variation. The method is statistical and employs the concepts of *variance* and *correlation*. In the Gaussian distribution curve the variance is calculated from the squares of the deviations of individual measurements from the mean; correlation is a measure of the extent to which the variability of two characters is associated. The method of calculating the *correlation coefficient* has been described by R. A. Fisher. The tendency for height to be associ-

ated in parents and children can be studied by determining the correlation coefficients between the height of a sample of fathers and their sons and between the same group of sons and their mothers. The two coefficients never vary significantly, showing that both parents are equipotent in determining the height of their sons.

It may be possible to detect heredity by determining correlation coefficients in relatives and in the same number of unrelated persons showing a particular condition. The standard error of the difference of the two correlation coefficients is then calculated, statistical significance being attained by a quantity that exceeds twice the standard error.

Very few of the variations in Man that are of clinical interest are susceptible to this type of analysis. It is, indeed, debatable as to how much can be deduced from the application of this method to human populations. When different genotypes develop in different environments the resulting phenotypes are functions of both variables. Except for a few instances of monozygotic and dizygotic twins reared in well documented environments, no assessment can be made of the importance of environmental factors and for this reason deductions of a genetical nature from the study of correlation may in some instances be invalid.

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REFERENCES.

BEADLE, G. W., 1945. *Biochemical Genetics.* Chem. Rev. 37.

BENZER, S., 1955. *Fine structure of a Genetic Region in a Bacteriophage.* P.N.A.S., 41, No. 6.

FISHER, R. A., 1941. *Statistical Methods for Research Workers.* Edinburgh.

GRÜNEBERG, H., 1947. *Animal Genetics and Medicine.* P. B. Hoeber, Inc., New York.

MCKUSICK, V. A., 1962. *On the X Chromosome of Man.* Quart. Rev. Biol. 37, No. 2.

The second article in this series on '*The Biochemistry of Genes*' will appear in the next issue of the Gazette.

NOTICE

INTER-HOSPITALS SEVEN-A-SIDE

Guy's Hospital Rugby Football Club are acting as hosts for the Inter-Hospitals Seven-a-Side Tournament on Wednesday, 24th April, at Honor Oak Park.

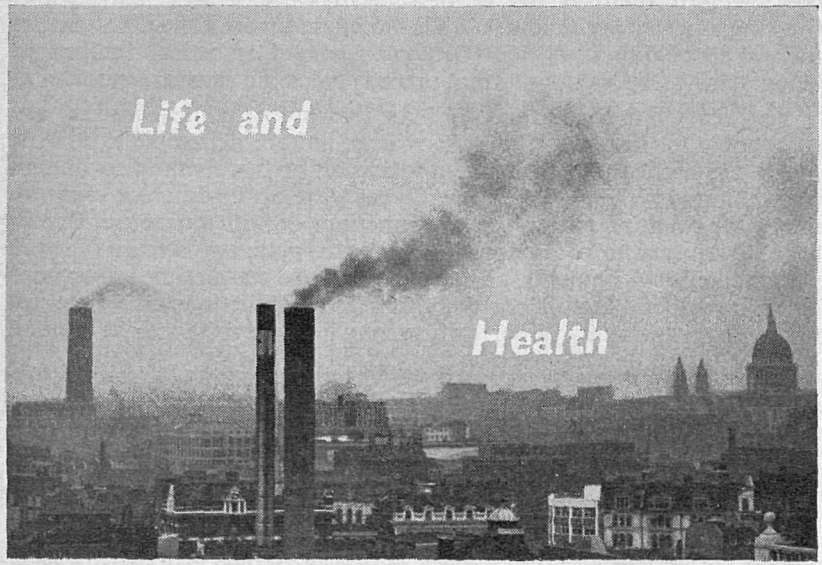
A warm invitation is extended to all Guy's men and women, past and present, to attend what promises to be a most enjoyable afternoon, as each London Teaching Hospital has entered the competition.

It will be followed by a dance in the Student's Club in the evening.

A. Lloyd Edwards. Capt. G.H.R.F.C.

BERMONDSEY & SOUTHWARK—IV

by Roger Blaney



Is there anything special or unusual about the people who live around Guy's Hospital? At first I tried to get an answer to this provocative question by making a point of living in the area. My intention was to get to know the people, by using what has been rather didactically dubbed "the casual or conversational interviewing technique". Henry Mayhew might have smiled to hear this high-sounding title applied to his long hours of conversation in pubs, attics and back-streets or to his spirited tussles with the street-cleaners and costermongers of East London. Even today there is a lot to be said for this most colourful form of demographic research, especially since the information it yields is often of that kind which defies computer analysis! Another, if less informal, way of getting to know the area and the people was to do evening surgeries for local general practitioners.

The object of this "macroscopic" examination of the Anatomy of the Local Hospital Community was to discover what kind of lives the people lead, how well-off they are nowadays, what sort of social and material environment they live in, the attitude of local people to doctors and hospitals, and whether any of these factors could have any possible bearing on their state of health or on how they use the medical services.

"Never had it so good"

The resultant impression was blurred by the dazzling aura of optimism which emanates from the people. No one actually used Mr. Macmillan's now rather tired slogan (coined in 1960) but I was continually persuaded that the boroughs were a Goshen of plenty. Indeed it is easy to be persuaded when one, for example, strolls through the busy shopping centres of the Old Kent Road, Tower Bridge Road and Walworth Road. There one sees a super-abundance of electrical shops selling "Hi-Fi" equipment and refrigerators. Butchers' shops abound, and their windows crammed with meat and chickens suggest a high standard of living. Many homes have stereophonic equipment and tape-recorders and it is unusual for any family not to have a television set. I was re-assured that a telephone in the home was commonplace. Rows of motor-cars can be seen parked outside working-class houses and the area has one of the most extensive rebuilding programmes in London with multi-storey flats mushrooming everywhere. The people themselves are well-dressed and every woman nylon-clad. The children look especially well-fed, clean and well-clothed. I was constantly reminded that, since there was full employment and all the family went out to work, there was plenty of money available.

As far as medical services were concerned all seemed well. The doctor-patient relationship was still sacrosanct and on the whole doctors and patients got on well together. The hospitals in the area were well spoken of. What could be better?

Is optimism justified?

Yet even a superficial examination of life in Bermondsey and Southwark should show any observer that there can be no reason for complete satisfaction. Why does one hear so few complaints about the dirt and grime which precipitates itself out of the air to settle everywhere like a black snow? A constant pall of smoke hangs over the area and the soot gets into a house through the smallest chinks. Quite apart from the grime, and despite rebuilding, the area still presents a dismal appearance. Many of the signs of affluence are illusory and a more detailed examination of, for example, the so-called "Hi-Fi" equipment sold in electrical shops reveals that very few items have an adequate "frequency response" to deserve the title. In fact, the range of goods sold in most shops is quite restricted so that one might have to go north of the Thames to buy anything even slightly unusual. Yet public transport, especially from Bermondsey, into the centre is mostly infrequent and inaccessible. Many people still speak of "crossing the water" as though this were a sort of transmarine expedition. Paradoxically, industrial traffic is lord of the local roads and the consequent noise, exhaust fumes and congestion can be most depressing. At the same time, there is an extraordinary lack of pedestrian crossings and of pedestrian push-buttons at even very busy road junctions. Long Lane is a noteworthy example.

The Spectre of the Past

Why then are the local people so optimistic? Much of the answer lies in their history. Until even quite recently, Bermondsey and Southwark were two of London's most notorious slum areas, and the gruesome spectre of the past pervades the people's thinking. Dickens was in a good position to describe the squalor of the industrial revolution since he lived in Southwark for a time, and we have corroborative evidence that he did not exaggerate from such reports as that of Dr. Vinen, the first Medical Officer of Health to St. Olave's, who described in detail the hovels he visited. There was no supply of clean water and housewives washed the family clothes in the sewers. Equally miserable conditions prevailed until well into the beginning of this century.

There are family doctors still practising around Guy's today who remember the dreadful disease and squalor in this area. Children were thin and undernourished, dirty and poorly-clad. Many were disabled with chronic disease. In one particular area of Bermondsey (Salisbury Street) the infant mortality rate was 182 deaths per 1,000 live births as compared to a rate of 103 for the rest of London, and five times as many children died of measles.

Even at the beginning of the twentieth century less than one per cent of households in the area had a bath. Indeed, overcrowding was so bad that such a luxury item would have taken up too much valuable living space. Seven per cent of people had tuberculosis, and in terms of family experience this meant that over a ten-year period there was a case of tuberculosis in every three houses in the area. Nearly half of the people with tuberculosis (45.2 per cent) shared a bed with others.

The Transition Period

The contrast in social environment today is remarkable and explains why the local people are rightly happy with the modern Bermondsey and Southwark. They are thankful for their prosperity and improved health. They are especially grateful to, and remember with affection, those great individuals who, with dedicated struggle, helped to bring about this transformation.

Guy's may be justly proud in particular of one of these great figures—Dr. Alfred Salter, one of whom the contemporary editor of "Guy's Gazette" wrote (10.4.1897): "Dr. Alfred Salter, having already won scholarships, prizes and two gold medals at the London University . . . has been awarded the Golding-Bird Gold Medal and Scholarship. . . . We offer him our heartiest congratulations and continue to speculate upon the possibilities of his future career."

In fact, because of the dreadful conditions which he first saw as a Guy's student visiting local people's homes, Salter gave up a promising career in academic medicine to become a general practitioner in Bermondsey. He wanted to devote his life to the poor people of the borough and, to further his aims joined the borough council and was instrumental in the social revolution which began in 1922. He

planned to demolish two-thirds of the borough and rebuild it as a Garden City, but although his dream has not been realised the change he helped to bring about was immense. The Council planted flowers and trees in every possible spot in the area. In 1927 the *Daily Chronicle* devoted its posters to "BERMONDSEY'S BOULEVARDS". The housing problem was tackled with fervour and determined attempts made to improve the health and environment of the people.

In 1926, when "The Solarium" in Grange Road was opened, visitors and deputations came from all over the world to see what was then one of the best-equipped and most up-to-date centres for the treatment of tuberculosis by ultra-violet light. Many tuberculosis patients were sent to Switzerland at the borough's expense.

In 1927 were opened the "sensationally magnificent" Public Baths, which were then the finest in England and included Turkish and Russian Baths. Headlines in the *Daily Mirror* ran—"SOCIALISTS BUILD £150,000 PALACE OF BATHS—MARBLE HALLS AND STAINED GLASS WINDOWS—LUXURIOUS TURKISH BATHS THAT FEW CAN AFFORD AND SPECIAL DEPARTMENT FOR BATH FOR BABIES". The Council's answer was that the workers of the area were entitled to "better than the best".

Certainly progress had come to the area, and Salter said, "We may yet become the most beautiful as well as the most healthy borough in London".

The Situation Today

It is understandable why the local people are thankful that the "bad times" are over now. In any case, they are a good-humoured people and tend to look on the bright side of things. In addition they are an uncomplaining people, and this along with the strong local patriotism make it unlikely that casual conversations would tell us much more than has so far been mentioned about any special problems they might have as a community.

For further information one must turn to special surveys and published facts. A special survey of the health of the people and how they use the medical services is being planned at present, but there is a wealth of interesting material to be found in Census Reports and published Health Statistics. And what do these facts tell us about life and health in Bermondsey and Southwark?

Social Environment

First and foremost, the area is still strongly working-class and has a very high proportion of unskilled labourers. In fact, Bermondsey, with 45 per cent of its residents in social classes IV and V (semi-skilled and unskilled workers) is the second most labouring-class area in London, and Southwark comes fourth (42 per cent). In contrast, Hampstead has only 15 per cent of its residents in these classes.

In the case of Bermondsey, most of the labourers are employed in "transport and communications" which includes dock-workers,

stevedores, warehousemen, bargemen, loaders of lorries and railway workers. This reflects the fact that over a third of the food supplied to the nation comes through Bermondsey docks. On the other hand, the commonest labouring occupations in Southwark are in the distribution of food, drink and coal, and in the paper and printing trades. Nearly half the women working in Bermondsey (49 per cent) and Southwark (43 per cent) are married. The Southwark women tend to work in the same industries as their men-folk, whereas a large proportion of the Bermondsey women are engaged in the preparation of food and drink.

It is extremely difficult to tell how well-off financially our local population is, but it has been shown that the possession of a telephone is a good indication. It is most unusual to find a telephone in a household which brings in less than £15 per week. Above this figure the likelihood of a family having a telephone increases more or less proportionally with income. Although it was anticipated that relatively few households in the area might have a telephone, the results of a special inquiry came as a surprise. It was found that only 7 per cent of households in Bermondsey and Southwark had a telephone and in some parts of the boroughs that the figure was as low as 1.8 per cent. This revelation stands out in sharp contrast to the rest of London where an average of 24 per cent of households possess a private telephone. The national average is 18 per cent. This is further evidence that our local population is not as prosperous as appearances might suggest. It also tempts one to speculate on whether those people without a telephone less often call in their family doctor or delay too long before contacting him.

Population Mobility

With the start of every working day about 80,000 people come into Bermondsey and Southwark to work. More than half of these travel in from the rest of London and a great proportion of the others come in from Kent, Surrey, Middlesex and Essex. At the same time, over 40,000 people move out of the area to work in other boroughs, principally the City and Westminster. (The sex of these people is not given in the official figures but one assumes that a large proportion of them is made up by the office cleaners). This means that at least 120,000 people are moving in and out of Bermondsey and Southwark every day. This is important for Guy's, because people tend to use the hospital nearest to where they work and a large proportion of Guy's out-patients are in fact people who work nearby. Since hospitals do not hold evening out-patient sessions they have no opportunity to use their local hospital unless they are willing to lose a day's work. It is this patient, unwilling or unable to lose a day's work, and anxious to get back to work from out-patients who gets impatient at waiting there. That working near Guy's is an important factor in determining out-patient attendances can be seen in the finding that just over 50 per cent of our new out-patients either live or work within a two-mile radius of the hospital.

Despite the enormous population movement, the people of the area remain as untouched as the inhabitants of a provincial town.

It is a closely-knit community, and more people living in Bermondsey (84 per cent) were born in London than for any other London borough. In contrast only 37 per cent of people living in Hampstead were born in London. The "provincial-town" or even "village" atmosphere is one which is difficult to describe but can be more readily appreciated in the evening and at the week-ends when the commuters have gone home. It also shows itself in the great interest that Bermondsey and Southwark people take in each other and in their warmth towards strangers.

Health

It is well known that the infant mortality rate shows a definite social gradient and is usually higher for lower social classes. It is also used as a rough indicator of the health and welfare of a community. Yet, contrary to expectations, one finds the infant mortality rate very favourable for Bermondsey and Southwark. In fact, since 1949, the rate has been hovering around 20-24 infant deaths per 1,000 live births whereas in 1949 the rate for the rest of the country was 30 and has only recently reached the lower figure of Bermondsey and Southwark. The credit for this must go to our very efficient obstetric service and to the good work of the Local Health Departments.

Claims for sickness benefit have also been used as an indication of the public health, but an examination of claims for sickness sent to the Ministry of Pensions and National Insurance from Bermondsey and Southwark, on the face of it, suggest an extraordinary situation. These were analysed separately for sickness and for injury and the number of claims per month expressed as separate rates per 1,000 of the population of Bermondsey, Southwark, London, England and Wales.

AVERAGE MONTHLY RATE OF NEW CLAIMS PER 1,000 OF POPULATION (1962):

	Sickness	Injury
England and Wales ...	14.1	1.3
London	16.0	0.8
Southwark	12.0	0.6
Bermondsey	28.1	2.2

The implication is that First Certificates for sickness and injury benefit in Bermondsey have been issued at a rate double that for the rest of the country and for even neighbouring Southwark. A more likely explanation is that the Bermondsey figure includes claims coming from Deptford, Camberwell and Southwark since the M.P.N.I. areas and borough areas do not coincide, and much more research needs to be done on these figures before any firm conclusions can be drawn.

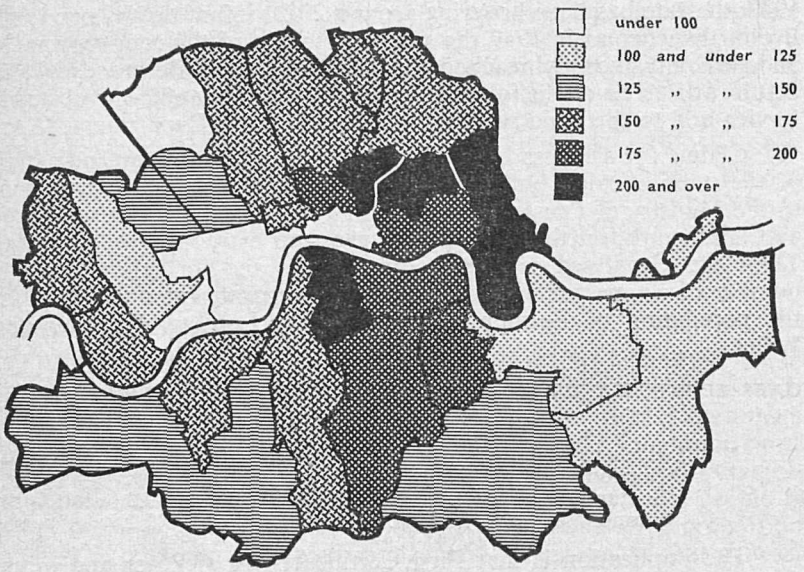
Overcrowding

Although Guy's is not yet surrounded by a Garden City as envisaged by Salter, it is no longer correct to talk of Bermondsey and Southwark as being "overcrowded". If one were to define "overcrowding" as a population density of more than two persons per room, it will be seen that 2.7 per cent of the Bermondsey population

and 2.9 per cent of people in Southwark live under these conditions, as compared to the London average of 2.5 per cent. Our local boroughs have the same overcrowding rate as Hampstead (2.7 per cent). Paradoxically, 4.6 per cent of people in Kensington live at a density of more than two persons to a room.

These relatively favourable local conditions are due both to the devastation of large areas in the wartime blitz and the energetic redevelopment and extensive slum clearance programmes in operation since 1930. These factors have resulted in a huge drop in population. Since 1931 the population of the area has gone down by over 30 per cent and the number of separate dwellings has decreased by 15 per cent.

STANDARDISED MORTALITY RATIOS FROM BRONCHITIS (MALES ONLY)
Metropolitan Boroughs 1950—1953
(*England and Wales* = 100)



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On the other hand the heritage of slum days is shown by a small amount of open spaces around Guy's and especially in Southwark, which, with only 0.36 of an acre of open space per 1,000 of the population, is the most building-congested area in London. At the other side of the scale is Westminster, which has the highest amount of open space with its 7.15 acres per 1,000 of the population. Bermondsey, with its open space acreage of 1.29, is not greatly below the London average of 2.47.

Mortality

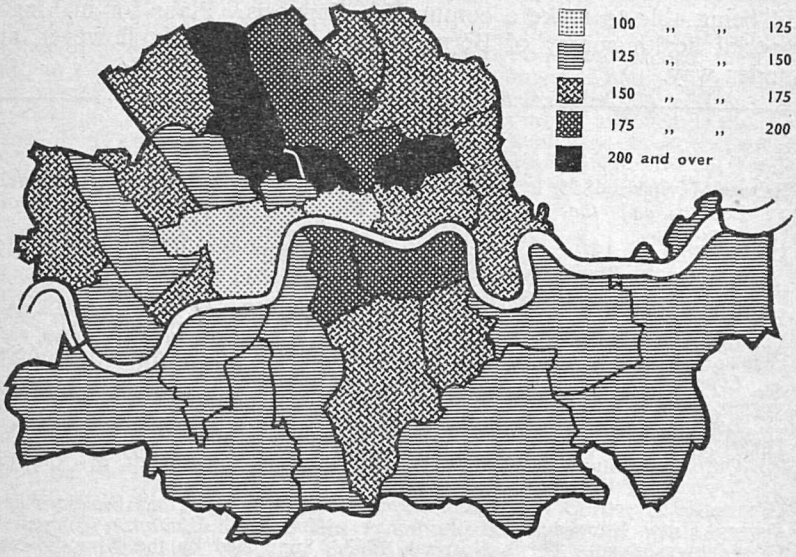
What are the risks of dying if you live in Bermondsey or Southwark? The answer is rather depressing. Firstly, it depends on

whether you are a man or a woman and secondly, strange to say, it depends in which of the two boroughs you live.

Southwark males with a standardised Mortality Ratio* of 124 for all causes of death have the second highest figure in England and Wales. The figure of 112 for Bermondsey males is also unfavourable and well above the London average of 106. Bermondsey and Southwark females come off much better with S.M.R's. of 96 and 107 respectively, compared to the London average of 97.

When the individual causes of death are examined, Bermondsey and Southwark are seen to be areas which carry an unusually high risk of dying from two main conditions—Bronchitis and Lung Cancer, and again this applies mainly to males. Southwark males have the second highest S.M.R. (236) in London for Bronchitis, and Bermondsey males have a rate of 184 compared to the London average of 153. For Lung Cancer both Bermondsey and Southwark males have high S.M.R's. of 176 and 184 respectively, even compared to the high overall London ratio of 156. The risk of dying from most other conditions if you live in the area is much the same as if you were living anywhere else in the country.

STANDARDISED MORTALITY RATIOS FROM LUNG CANCER (MALES ONLY)
Metropolitan Boroughs 1950—1953
(*England and Wales* = 100)



Reproduced by courtesy of the L.C.C.

*The S.M.R. expresses the actual number of deaths at all ages in each borough as a percentage of the expected number of deaths, i.e., the number that would have occurred in the area if the death-rate in each age-group had been the same as that for England and Wales. (Therefore the S.M.R. for England and Wales is 100).

It is noteworthy that the two chest conditions of Bronchitis and Lung Cancer have much in common. They are both more common in industrial areas than in rural areas. There is a correlation between the S.M.R's. and the London Borough which have the highest percentage of their residents born in London, suggesting that the longer one lives in London the more likely he is to die from these conditions. Working class people are more likely to die from these illness than professional people and indeed Bronchitis has the highest social class gradient of all diseases. They are both related to cigarette smoking and air pollution.

The single factor which stands out above all others is air pollution. An examination of the map of London giving S.M.R's. for Lung Cancer for all the boroughs shows a wedge of high ratios north of the Thames with an apex on Bermondsey and Southwark. This suggests that the prevailing south-westerly wind tends to blow smoke-laden air from the south of the Thames to the north.

Conclusion

We began with the idea of Mayhew quizzing East Londoners in pubs and ended with an investigation of available statistics and still have only skimmed the surface of life and health in Guy's local population. Each method of approach tells us more but each has its limitations. Mortality statistics, for example, tell us nothing about morbidity in the community so that we are not yet in the position of being able to make a community diagnosis. Plans for making a special health survey of Bermondsey and Southwark, however, are under way.

REFERENCES.

HENRY MAYHEW, 1851. *"Mayhew's London"—abridged edition of "London Labour and the London Poor," ed. Peter Quennell. Spring Books, London.*

D. M. CONNAN, 1935. *"A History of the Public Health Department in Bermondsey". Bermondsey Borough Council.*

PASSIM, 1897. *Guy's Hospital Gazette*, 2, 183.

FENNER BROCKWAY, 1951. *"Bermondsey Story", George Allen and Unwin, Ltd., London.*

GENERAL REGISTER OFFICE, 1960. *" Classification of Occupations". H.M.S.O., London.*

——— 1957. *Census*, 1951, *England and Wales: Industry Tables, H.M.S.O., London.*

PERSONAL COMMUNICATION. Results of an enquiry kindly carried out for the Outpatient Study by Professor Colin Cherry, Department of Electrical Engineering University of London.

GENERAL REGISTER OFFICE, 1956. *Census*, 1951, *England and Wales: Report on Usual Residence and Workplace. H.M.S.O., London.*

OUTPATIENT STUDY. Guy's Hospital, 1963. Supported by the King Edward's Hospital Fund for London. *Unpublished results.*

ANNUAL REPORTS, 1949-61, *of the County Medical Officer of Health and Principal School Medical Officer. London County Council.*

MINISTRY OF PENSIONS AND NATIONAL INSURANCE, 1963. *Unpublished figures for new claims for Sickness and Injury Benefit.*

GENERAL REGISTER OFFICE, 1956. *Census*, 1951, *England and Wales: Report on Greater London, and Five Other Conurbations. H.M.S.O., London.*

———, 1958. *Registrar General's Decennial Supplement*, 1951: *Area Mortality. H.M.S.O., London.*

CORRESPONDENCE

The Casualty Problem

SIR, the letter from your correspondents, and particularly your comments in Passim, are welcome and helpful. Please accept my apologies for such a lengthy reply. Various aspects of the Casualty problem are under review by different committees, and I would not have replied now without consulting the Superintendent. There are certain points about all Casualty Departments which might, with advantage, be made clear again, because of lack of general awareness of them.

These points concern the very real differences that exist at almost all general teaching hospitals between their different Casualty Departments. These differences cover chiefly, scope of work, staff structure, accommodation, and admission arrangements for emergencies.

Scope of Work. At Guy's, we are, and always have been, a comprehensive Casualty Department, with advantages, I believe, both to the patient, and to medical education; but not all major hospitals do the same, e.g., The London, the Edinburgh Royal Infirmary, which split up their casualties into different groups in different departments to ourselves. The primary attendances at the Front Surgery for "accidents" are about equal to those of the "Sick".

To take a point from your letter. Our policy is to reduce G.P. type patients to a minimum; but we must accept some. It would be quite wrong and dangerous to reject them at the door by non-qualified staff. To do so would exclude travellers, the migrant labour force without G.P.'s, and patients who for some reason have not contacted their G.P., from their right of treatment under the N.H.S. All Casualty Departments, I believe, admit a necessary proportion of such patients for at least one attendance.

Staff Structure. The two chief characteristics of the Guy's system are, first, the important and large responsibilities given to Dressers, and, second, the fact that the Casualty Officer is an early pre-Registration job. Both arrangements have always been so, and have been considered almost universally at Guy's to contribute to the development of a typical "Guy's man", and beneficially so. This trust of such responsibility to relatively junior staff may, arguably, be less acceptable in modern terms to the public and the press than it was; but I still believe its advantages to be decisive—to the developing doctor, and to most of the patients.

Accommodation. Our accommodation is the newest and, I believe, the most generous in England. We have 17,000 square feet for 30,000-plus new patients a year; but full or good utilisation is made daily of each separate room; and it must be remembered that big clinics are also accommodated with us on the ground floor of New Guy's House, e.g. Orthopaedic, Fracture, Hand Clinics and blood collections. From the casualty point of view, the accommodation is divided into a Primary wing (Front Surgery) and a Secondary wing (Back Surgery, for repeat attendances). The basic arrangement of the accommodation in the Primary wing is that the "accidents" are accommodated separately from the "sick" as strictly as is practicable. The "accidents" are also served by separate individual Dressers and Casualty Officers within the parts of the Primary wing nearest the entry.

I imagine that your correspondents have used the word "Casualty" as synonymous with "Accident". This is an understandable and approximately true usage. (The word "casualty" has many meanings; the Shorter O.E.D. gives "casualty" as meaning "a fatal or serious accident", "a chance occurrence", or "losses by death, desertion, etc.") I am sorry, but mildly surprised, that your correspondents have worked in the Casualty Department without appreciating this fact of segregation of the "Accidents", particularly the trivial accidents, from the "Sick". It cannot, of course, hold for, the more important but minority group of, ambulance cases, whose needs, in any case, for diagnosis, disposal, and resuscitation in Casualty, are similiar whether they are "coronaries", or multiple injuries.

Admission Arrangements for Emergencies. Our system, whereby this is a matter of agreement between two relatively junior doctors, is clearly beneficial to the development in them of sound clinical knowledge and a good sense of clinical responsibility, by the time the doctor reaches the junior staff. There is no doubt that it adds to the time the patient spends in the Casualty Department. At the Royal Melbourne Hospital, where, I understand, the Casualty Department, its patients, and arrangements within it, are very similar to our own, all admissions of emergencies are handled by a registrar who is in complete control of the available emergency beds. The admission of casualties is correspondingly handled very much more expeditely; but with, I believe, a real loss to medical experience and education at an important level.

It is, of course, obvious that there is a built-in conflict between promptness in disposal of the patients on the one hand, and the interests of full care and medical education on the other. Nor, from the patients point of view, is everything on the side of promptness. An example might suffice. A patient with a ruptured spleen has been seen promptly in the Surgery, most thoroughly examined and sent home. Only an hour later, which with less prompt attention, he might have spent in the Surgery, did he develop those signs and symptoms which made his serious condition clear.

Also relevant to the question of time which new patients spend with us, is the fact that daily numbers of new patients have apparently risen in the Casualty Department by nearly 50 per cent. in the last year, although, as far as can be judged, the very great majority of serious injuries and serious "sick" have been seen within 10 to 20 minutes of arrival. It is regrettable, but, to a certain extent, unavoidable, that a fair number of the trivial injuries should sometimes wait considerably longer; this, I believe, to be sometimes inevitable in view of the great fluctuations in the numbers of new patients needing attention at any one time which occur.

It also should be understood that a minor laceration, who has to have an X-ray, ATS with "test dose", and a repair of his wound in the theatre, can seldom be out of the Surgery in under three hours. If a wound needs more complicated repair, or if detailed instruction and teaching are given to the student while doing the operation, this time spent in the Surgery may be significantly longer, and all of it essential time.

To take a further point from your letter. I believe it is necessary for ATS (or possibly dangerous administration), and for X-rays (of great potential legal importance to the Hospital) to be ordered by medically qualified staff, although I agree with your correspondents that it would save time if students were able to order them on their own responsibiilty.

Finally, may I plead that the impact of your correspondents' ideas for improvements in the Casualty Department would have been greatly strengthened if all four of the signatories had attended punctually and regularly when supposed to do so on their Surgery Rota. This implied criticism certainly does not apply to two of the signatories. It is certain, as everybody in the Hospital well knows, that the efficiency in the Casualty Department at Guy's depends very largely on the punctuality and regularity of Dressers due there on the Rota.

Yours, etc.,

PATRICK CLARKSON.

107, Harley Street, W.1.

NOTICE

THE RESIDENTS' BALL

The Residents' Ball will take place on Friday, 17th May, at the Hilton Hotel. All members of the Guy's community, past or present, students and staff, are welcome on this occasion. Tickets, price four-and-a-half guineas, may be obtained on application to the President of the Residents or the Ball Secretary.

ROBERT SELLS,

President of the Residents.

SPORT

HOCKEY

The 2nd XI finished their season in grand form by winning the Inter-Hospitals' Junior Cup, beating Bart's in the final by five goals to one. The first half was tightly fought, both sides scoring one goal. K. Riding placed the ball home from a narrow angle for Guy's. The second half saw less constructive play, until towards the end Guy's made a concerted effort and scored four goals. J. Moran scored twice and A. Winskill and G. Hodgson added one goal each.

In the semi-final, a week earlier, the eleven convincingly beat Middlesex Hospital by six goals to one.

RUGBY

A weakened Hospital XV on their first visit to Bridgend met fast, skillful opponents, who moved the ball relentlessly between backs and forwards in a perfect display of open rugby. Guy's were lacking experienced three-quarters in the absence of Egwuatu, Biggs, Edgar and Boyd, and Fisher was unavailable in the scrum. A failure to check the Bridgend attack in its early stages allowed them to make ground quickly and overwhelm any covering defence by quick inter-passing with their fast, supporting forwards. At the whistle they tallied twelve tries, eight of which were converted. A. Morris, at full-back, and R. Sinclair, at prop, making their First XV debuts, tried hard in this difficult initiation.

Few excuses can be found for the XV's scrappy display against London Irish. The side was back to normal strength, but was lacking in spirit and drive. Price hooked well and Peace and Davies worked hard in the lines out. In the loose, however, Guy's were slow and employed any possession to little advantage. Biggs and Edgar, individually, attempted to attack with short kicks ahead, but it was not until Egwuatu was put clear just outside the Irish "25" that the Hospital's only score was achieved. At "no-side" London Irish led 23—3.

Earlier in the week, R. Myall, D. Biggs, E. Price and A. Lloyd-Edwards appeared in the United Hospitals XV, which lost 9—8 to United Provincial Hospitals at Cambridge. J. Edgar and Biggs have also recently represented Eastern Counties and Kent respectively. This season, the United Hospital Seven-a-Side Tournament is being organised by Guy's. It will be held at Honor Oak Park on Wednesday, 24th April, commencing at 2.30 p.m.

ROWING

A series of illnesses in recent weeks has upset training and practice outings and also forced crew changes. In the last two Head of the River Races rowed, the crew has been far below its true potential. At Reading, R. P. Jenkin was still unfit and he was replaced by D. Gurney. The VIII dropped one place to finish 64th out of the 149 crews taking part. Little improvement was seen in the Tideway event where the Hospital finished 168th out of an entry of 277.

The second VIII were unfortunately involved in an accident in the Reading event and they found the going too strong on the Tideway, where they finished 262nd.

FENCING

In the second round of the Inter-Hospitals Foils Cup, the Club narrowly beat St. Thomas's in a keenly contested match. St. Thomas's took an early lead, but Guy's fought back well and with two bouts remaining, the score stood seven bouts all. C. Durant took the 15th bout, but St. Thomas's won the final contest to make the scores again equal. Fortunately, Guy's fencing had been more fruitful throughout and the match was won by 13 hits. J. Cressall won three bouts; C. Durant and E. Harley won two each; and B. Hartley won one.

HOCKEY

INTER-HOSPITALS JUNIOR CUP FINAL

Guy's v. Bart's

At H.O.P. 30th March, 1963
Result—Won 5—1

In spite of heavy overnight rain the pitch was in excellent condition. Guy's won the toss and were soon on top, exerting much pressure on a shaky Bart's defence. A. Winskill was outstanding on the right wing, beating his half-back easily with his clever reverse stick play. The first goal came after 20 minutes, K. Riding finishing off a left-wing movement with a hard shot from a narrow angle. By this time it was raining heavily, making good hockey difficult. Bart's equalised 10 minutes later with a shot which gave S. Rear no chance.

The pitch was almost waterlogged as the second half commenced and play became rather scrappy. However, after 10 minutes, Bart's were awarded a penalty corner which resulted in N. Turfitt stopping a full-blooded drive in the groin Following this, play went straight to the other end of the field where G. Hodgson put Guy's ahead with an excellent shot from the edge of the circle. From this point onwards Guy's completely dominated the game. Bart's defence panicked and resorted to first-time clearing of the ball. Before the end, Guy's scored three more goals, through J Moran (2) and A. Winskill (1).

Guy's fully deserved their victory. T. Negus stood out in a very solid defence and the forwards, moving quickly and combining well, made the most of their chances.

Team: S. Rear; P. Davy, T. Negus; K. Laing, N. Turfitt, G. Hodgson; K. Riding, J. Moran, P. Rushmer, R. Porter, A. Winskill.

RONALD PEARSON.

ROWING

Reading Head of River Race. 16th March, 1963

Position—64th.

Crew: Bow: M. A. Preece. 2: D. Telling. 3: D. Gurney. 4 C. P. Warren. 5: D. K. C. Cooper. 6: C. D Hawes. 7: N. Watson. Stroke: P. D. Venning. Cox: A. Green.

Tideway Head of River. 23rd March, 1963

Position—168th

Crew: As above, except R. P. Jenkin for D. Gurney at 3.

2nd VIII Crews

From: R. Forrest (Capt.). D. Keith (stroke). P. Trenchard (cox). P. Sharp. M. Hodge. J. Williams. W. Dean. G. Tennekoon. R. Sainsbury. R. Dunham. S. Gregson.

RUGBY

Guy's v. Bridgend

At Bridgend 23rd March, 1963
Lost 0—52

Throughout the season Guy's 1st XV have been unlucky in the strength of the side they have been able to field. Never has it been more evident than in the match against Bridgend when eight positions were filled by people playing either out of their normal position or by reserves.

The pitch and weather were perfect. This was quite a change after the conditions over the last few months and the large crowd eagerly awaited the outcome. The game developed into a fast and open one, but unfortunately for Guy's, all but a few of the movements came from the Bridgend side with Guy's on the defensive for the majority of the time. During the first five minutes there was no evidence of the high scoring that was to come with what seemed to be two evenly matched sides, the forwards giving the ball to their backs as often as possible and both defences standing up well to the continued open play. Guy's were awarded a penalty on the half-way line and Morris narrowly missed with a good kick at goal. This, however, was for Guy's the turning point of the game. Bridgend, their backs up after being nearly 3 points down, gave the ball from every conceivable position to their threequarters who proceeded to run and kick deep into Guy's territory. It was not long before they scored and started an almost monotonous succession of tries with kicking from all angles. Thus at half-time Guy's found themselves down by 26 points to nil and wondering what they could possibly do to stem this continuous attack on their line. Although the Bridgend backs were in fine form, Guy's were to blame for quite a few of the tries. Careless kicking, fumbled and dropped passes were seized upon by the Bridgend side and turned into winning movements. The Guy's tackling was sadly at fault, with Bridgend players at times almost nonchalantly walking through the team. At other times the fullbacks or wingers were left with three players in full flight to tackle with little hope of stopping either one crossing the line.

A stern lecture from Lloyd-Edwards who, together with Brown and Baker, had covered and tackled well resulted in the opening quarter hour of the second-half being mainly Guy's. This seemed a totally different side from the one which played in the first half. Guy's at times even looked the better side and had it not been for stupid mistakes should have scored on numerous occasions. However, as had happened in the first half, Guy's went to pieces, and allowed the Bridgend backs and forwards to once again give a display of fine attacking rugby. Guy's must however be praised for the fact that whenever they were in the position to attack they exploited this to its fullest and were unfortunate not to score on a few occasions. The final whistle drew to the end a game in which Guy's weaknesses were exploited to the full, by the team which is one of the finest in the British Isles.

Team: A. Morris; R. Myall, C. J. Wright, J. C. Thomas, R Hollingsworth; F. Smith, D. R. Bevan; J. E. Davies, E. Price, R. Sinclair; P. K. Peace, A. J. Kingdom; R. Brown, D. R A. Lloyd-Edwards (Capt.), I. A. Baker.

TONY THOMAS.

March 23rd.
A XV v. Blackheath "A", won 14—11.
Ex A v. Saracens "A", lost 0—17.
Ex B v. St. George's "A", lost 0—22.

March 30th.
A XV v. Old Whitgiftians, drew 0—0.
Ex A v. Hoover, lost 3—17.
Ex B v. Civil Service "B", won 13—8.

1st XV Record P. 24 W. 4 D. 0 L. 20.
Points for 143. Against 413

HOSPITAL INFORMATION

APPOINTMENTS VACANT

GUY'S HOSPITAL DENTAL SCHOOL

Applications are invited for the appointment of **Senior Lecturer/Lecturer** in the **Department of Conservative Dental Surgery** with attendance on 6 sessions per week. Appointment to date from 1st October, 1963. Full-time Salary Scales:

Senior Lecturer	£2,000 x £100 to £2,400 (bar) £2,500 x £100 to £2,700
Lecturer	£1,450 x £100 to £2,150 x £50 to £2,200

both with superannuation and family allowance.

Application should be made on a form, obtainable from the Dean, Guy's Hospital Dental School, London, S.E.1., not later than **Wednesday, 24th April, 1963.**

GUY'S HOSPITAL
HOUSE APPOINTMENTS

1st JUNE, 1963

Applications are invited for the following House Appointments at Guy's Hospital due to begin on June 1st, 1963, applications giving choice of post and choice of Hospital, in order of preference, to be lodged with the Superintendent not later than **Saturday, April 27th, 1963.**

Assistant House Surgeons 3
Pre-Registration

The appointment will be for six months, the first three months to be spent as A.H.S. During the second three months of the appointment candidates will either move to the post of Casualty Officer (Surgical) or will remain as A.H.S.

These vacancies will normally be open only to Pre-Registration candidates applying for their first appointment and not to candidates seeking their second six months appointment.

Assistant House Physicians 3
Pre-Registration

The appointment will be for six months, the first three months to be spent as A.H.P. During the second three months of the appointment candidates will either move to the post of Casualty Officer (Medical) or will remain as A.H.P.

These vacancies will normally be open only to Pre-Registration candidates applying for their first appointment and not to candidates seeking their second six months appointment.

Casualty Officers 6
Pre-Registration

House Surgeons 2
1 *Pre-Registration*
1 *Pre- or Post-Registration*

House Physicians 2
1 *Pre-Registration*
1 *Pre- or Post-Registration*

Resident Obstetrician 1
Post-Registration
(To commence 1.7.63)

Throat and Ear House Surgeon .. 1
Pre- or Post-Registration

Orthopaedic House Surgeons 2
Pre-Registration

Genito-Urinary House Surgeon .. 1
Pre-Registration or Post-Registration
(Second six months candidate only)

House Surgeons to the Thoracic Unit 2
1 S.H.O.
1 *Pre-Registration*

Children's House Physician 1
Pre-Registration
(Second six months candidates only)

House Physician in the Department of Experimental Medicine 1
Pre-Registration

House Physicians in Clinical Pathology 2
S.H.O.

R.M.Os. in Nuffield House 2
(S.H.O.)
(1 to commence 1.6.63)
(1 to commence 1.7.63)

Resident Anaesthetist. 2
1 *Post-Registration*
1 S.H.O.

GUY'S HOSPITAL

Applications are invited for the following appointments to commence on 1st October, 1963:

Department of Conservative Dental Surgery
Registrars to attend on up to 6 sessions per week.

Department of Dental Prosthetics
Registrars to attend on up to 6 sessions per week.

Dental Department for Children
Senior Registrar/Registrar to attend on 6 sessions per week. Orthodontic Assistant to attend on 6 sessions per week.

Clinical Dental Surgery
Senior Registrar to attend full-time.

Department of Preventive Dentistry
Registrars to attend on 6, 5, or 3 sessions per week.

Casualty Department
Registrars to attend on 6 or 5 sessions per week.

***Minor Oral Surgery* Department**
Registrars to attend on 6 or 3 sessions per week.

Dental Radiology Department
Registrars to attend on 6, 5, or 3 sessions per week.

Dental Officer to treat In-Patients
One Dental Officer to attend on 6 sessions per week.

The posts will be subject to the Terms and Conditions of Service of Hospital Medical and Dental Staff in the National Health Service. Forms of application are obtainable from the Superintendent, Guy's Hospital, London, S.E.1., which when completed, should be returned not later than **Wednesday, 24th April, 1963.**

The Medical Committee will also consider applications for posts at outer Hospitals as follows:—

BECKENHAM HOSPITAL
House Physician 1
Pre-Registration
(locum from 20.5.63)
House Surgeon 1
Pre-Registration

LEWISHAM HOSPITAL
House Surgeon to Mr. Le Brun .. 1
Pre-Registration

House Surgeon to Mr. Jemson .. 1
Pre-Registration
House Physician to Dr. Roberts .. 1
Pre-Registration

NEW CROSS HOSPITAL
House Physician 1
Pre-Registration

ORPINGTON HOSPITAL
House Surgeon (General Duties with Gynaecology) 1
Pre-Registration
House Surgeon (General Duties with Ophthalmology) 1
Pre-Registration

PEMBURY HOSPITAL
House Surgeon (General Duties) .. 1
Pre-Registration
Orthopaedic House Surgeon 1
Pre-Registration

QUEEN MARY'S HOSPITAL, SIDCUP
House Surgeon 1
Pre-Registration
House Physician 1
Pre-Registration

ST. JOHN'S HOSPITAL, LEWISHAM
House Surgeon (General Duties with Gynaecology) 1
Pre-Registration

ST. OLAVE'S HOSPITAL
House Surgeon 1
Pre-Registration

NOTICE FOR PRE-REGISTRATION CANDIDATES

Pre-Registration candidates are reminded that the number of posts at Guy's is small compared with the number of students who are likely to qualify. Students applying at Guy's, therefore are advised to consider applying for Pre-Registration posts elsewhere at the same time, in order to avoid delay in obtaining a post A number of recognised posts is available in the South-East Region. Details of posts in this region and elsewhere in the country are available in the Medical School office.

Pre-Registration candidates who have completed six month in Medical or Surgical posts are reminded that they must now apply for Surgical and Medical posts respectively. A candidate who has completed his first six months in a specialty (surgical or medical) may not do another six months in a specialty but must seek a post in general medicine or general surgery as the case may be, according to G.M.C. regulations.

AWARDS

WOOLDRIDGE PRIZE IN PHYSIOLOGY, 1963

The following award has been made:

K. N. Dunn — Prize

THE CHARLES OLDHAM PRIZE IN OPHTHALMOLOGY—1963

The following awards have been made:

Miss C. M. Britton } bracketed equal
B. S. Worthington } for first prize
C. B. T. Adams — Second prize

NURSING NEWS

Appointments:

Miss P. Jowett, at present an Assistant Matron at Guy's, has been appointed the Assistant Nursing Officer to the North East Metropolitan Regional Hospital Board.

Sister Ruth Butler, at present Sister Tutor in the School of Nursing, has been appointed as Principal Sister Tutor to the Welwyn and Hatfield Hospital.

Sister M. Calvert, at present Sister in Charge of Nuffield Theatres, has been appointed to the Hospital Department of the Royal College of Nursing, Ward and Departmental Sisters' Section.

Sister G. Blackmore, recently Sister in Mary Ward, has been appointed as Assistant Matron at Addenbrooke's Hospital, Cambridge.

The following nurses have passed the Final State Examination held in February, 1963:—

Armstrong, M.A.	Page, G. I.
Bowling, A. S.	Phillips, C. D.
Chan, K. S.	Roberts, H. M.
Clynick, D. R.	Robinson, D. M.
Collins, A.	Rodney, M. J.
Conlin, M. E.	Scanlan, S.
Cowley, H. J.	Spear, A. E.
Darkin, U. J.	Summerell, G. V.
Davidson, M. C.	Taylor, P. A.
Elliott, E.	Thomas, A. M.
Geddes, C. E.	Tomalin, A. P.
Godwin, J. H.	Vaux, E. M.
Goodchild, J.	Williams, S. M.
Hall, J. M.	Wright, M. D.
Higgins, R. C.	Dodson, M.
Kesterton, A. C.	Finch, S. P.
Markwick, J. R.	Fone, P. W.
Melloy, P. J.	Bailey, G. P.
Neale, C. E.	Downey, R. M.
Newbigging, M. J.	Newton, B.

Entered:
Sister J. Crawford to *School of Nursing.*
Sister M. Wilson to *Dorcas.*

Left:
Staff Nurse H. Jordan from *Casualty.*

CHANGE OF ADDRESS

Dr. C. Bishop, M.B., B.S., F.F.A., R.C.S., 169, Henley Road, Ipswich, Suffolk.

Mrs. D. L. Cobb, P.O. Box 58, Thika, Kenya, East Africa.

Dr. G. B. Clinton Jones, M.A., M.B., Treetops, Buckland Dene, Lymington, Hants. Tel: Lymington 2662.

Mrs. J. Reinhold, 1227, W. Mountain Ave., Fort Collons, Colorado.

Drs. Peter and Ann Whitehead, 3, Queen Anne's Grove, Ealing, W.5. Tel: EAL. 9022.

Dr. S. J. S. Lam, M.B., F.R.C.S., F.R.C.S.E., 4, Matfield Close, Hayesford Park, Bromley, Kent.

BIRTHS

DAVIS.—On 27th January, to Dr. and Mrs. D. P. Davis, at Eshowe Hospital, Zululand, a son, Simon, brother to Guy and Ann.

HAMILTON.—On March 16th, at Birmingham Maternity Hospital, to Mary (*née* Magor) and Jim Hamilton, a son (David Gilmour), a brother for Jenefer, Susan, and Fiona.

WABOSO.—On 23rd March, 1963, at City Maternity Hospital, Gloucester, to Margaret, wife of Marcus F. Waboso, M.R.C.S., D.Obs., R.C.O.G., a son (Martin Okoroma) a brother for Paul, David and Andrew.

DEATHS

WOTTON.—On 1st February, 1963, Jack Wotton, L.M.S.S.A.London, of 22 Hamilton Terrace, Milford Haven, Pembs. aged 41.

GUY'S HOSPITAL GAZETTE

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Editors *W. G. Reeves*
S. M. Wood

Sports Correspondent *Ian Baker*

Guy's Hospital, London

PASSIM

The Third Stage

The redevelopment of Guy's is now very much under way and shortly the first two stages will have been completed. For New Guy's House has been in active use now for nearly two years and according to the present schedule the reconstruction of Guy's House, including the East Wing, should be completed by May, 1964. Thus it is encouraging to note that further development has now been included by the Ministry of Health in the latest Ten-year Plan published this month. This will include a new dental hospital, children's wards, obstetric unit, out-patients' department and boiler-house, and it is hoped that all these departments will be located within a new Tower Block situated to the North of New Guy's House. Negotiations concerning the exact form that this development will take are now reaching the final stages with the London County Council and the Ministry of Health.

Eventually, if present prospects mature, Guy's Hospital will be anatomically divided into clinical departments to the East of Great Maze Pond, with the academic and residential accommodation on the West side, separated by an enlarged park. For, at a later stage, it is hoped to build a new Medical Block towards Weston Street, replacing Hunt's House and lastly a site has been provisionally allocated for a new students' hostel in the South-east corner by Snowsfields.

During the last year an evaluation of the design and equipment of New Guy's House has been performed by a team of experts in various fields. Their assessment has been made with special reference to the traditional open ward pattern and their conclusions will obviously be very significant to the design of the other parts of the hospital which are to be rebuilt.

Smoke

Aetiological hypotheses stimulate medical controversies and it is uncommon for evidence of causation to be as clear-cut as Koch's postulates for the infective origin of disease. As causes are sought, so new and entirely convincing concepts emerge, such as certain inborn defects and immune reactions, but there still remain theories which rely solely on circumstantial evidence and its statistical appraisal. Obviously the weakness of such indirect support is the scope which it leaves for individual interpretation and acceptance. Thus one may observe the widespread rejection of the idea of "focal sepsis" in many disease processes and the ever-increasing popularity of the concept of auto-immunity, but these fluctuations are not due only to new objective evidence: the individual subjective reaction to a theory plays a large part.

The part played by individual interpretation in the current controversy about the aetiological role of smoke is a fascinating

example: it varies with the source of the smoke; whether from chimneys, motor vehicles or tobacco. Atmospheric pollution is unpleasant and its eradication involves only minor personal financial discomfort and is therefore universally regarded as a villain in the story of chest disease, whereas tobacco smoking gives personal pleasure to three-quarters of men and women in this country at considerable expense, and while suspect, has acquired only the significance of Eve's forbidden apple.

It will be interesting, therefore, to speculate on the future fate of evidence presented in some recently-published papers, all remarkable for their objectivity. On tobacco-smoking a survey on the smoking habits of medical and non-medical "academics" at Edinburgh (*British Medical Journal, 1963,* i, 852) has refuted an argument used by opponents of smoking to discourage the habit, that doctors smoke less than the general populace: in fact, the survey showed that within their own social class doctors smoke more heavily than others and only the heaviest smokers amongst them were more successful in reducing their smoking following the Royal College of Physicians' report (Smoking and Health) of last year. These results seem destined to join the armamentarium of protagonists of smoking and of those with a vested interest in tobacco sales. On the subject of the London fog of last December, Dr. J. A. Scott (*The Medical Officer* **109,** 108) showed a progressively less detrimental effect on health of the four major fogs since 1952, which he attributed to a reduction in air pollution over that time, and a paper from Guy's (*Lancet, 1963,* i, 580) implicated the fog in some cases of acute bronchiolitis, possibly due to some new harmful air pollutant—two pieces of evidence to justify the present campaign for smoke control which has achieved a great deal since the Clean Air Act of 1956.

Bermondsey's progress in smoke control is described on page 189 of this issue and the article, by the Borough's Medical Officer of Health, airs some little-known points about fumes from motor vehicles.

Fauna and Flora

Rows of crocuses have recently appeared standing in military fashion outside Matron's Office, and with a display of daffodils now flowering in front of the Dental School one wonders if our Cambridge friends will not be feeling a little homesick for the "backs". But although the "fronts" of Cambridge are well known to be conspicuous for their absence, even ours has become so moved that the exact location of the main entrance of the hospital is now in some doubt and will probably remain so until, as with all other departments *en passant,* a suitable site has been allotted. And by that time we may well see a sweeping and impressive motorway linking the two halves of the hospital, with the exotic glades of the new park on either side.

An omen of uncertain significance is that, of late, one has noticed an ever-increasing number of black cats patrolling the hospital grounds. Perhaps we should treat them with respectful deference; after all, should not they be included in the recent personnel flow-studies undertaken in the hospital?

GUY'S DIARY

APRIL

EXHIBITION. *Bone Tumours.*

22nd	M.	1.00	Dr. McCONNELL. Clinical Lecture. *Methohexitone* (with film)
23rd	T.	1.00	Mr. BLACKBURN. Clinical Lecture. *The Management of Thyrotoxicosis.*
25th	Th.	1.00	Professor HUNT. Clinical Lecture. *Controlling Gastric Emptying.*
29th	M.	1.00	Mr. STAMM. Clinical Lecture. *Fractures of the Femur.*
30th	T.	1.00	Dr. KENDALL. Clinical Lecture. *The Treatment of Sports Injuries.*

MAY

EXHIBITION. *Retention of Urine.*

6th	M.	1.00	Dr. JOINER. Clinical Lecture.
7th	T.	1.00	Mr. SCHURR. Clinical Lecture. *The Sequelae of Head Injury.*
9th	Th.	1.00	Dr. JOSEPH. Clinical Lecture. *Body Temperature in Paediatrics.*
10th	F.	1.00	Dr. VAUGHAN. Clinical Lecture.

AN APPRECIATION

Dr. JEAN MORTON.

Miss Jean Morton qualified at St. Andrew's and before the war was a specialist in Venereology in Birmingham. After the outbreak of war she was commissioned in the Royal Air Force Volunteer Reserve in the Medical Branch. Her experience in civil life as a Venereologist was of great value in the Service and for several years Miss Morton, with the rank of Squadron Leader, was in clinical charge of the female wards at Evesham. Her kindly approach to patients who were often nervous and difficult, was greatly appreciated. Although Miss Morton was primarily employed in dealing with venereal disease among the W.A.A.F., she was always ready to help with the duties of other medical officers and was a most popular member of the Officers' Mess at Evesham.

Soon after the end of the war Miss Morton came to Guy's as Medical Officer in the female V.D. Department and very soon was appointed as a Consultant. In addition to her work at Guy's she was also V.D. Specialist to the county of Hertfordshire.

During the fifteen years which Miss Morton spent at Guy's, she gained the affection and esteem not only of the Consultant Staff, but also of students and junior staff. Miss Morton took a great interest in the Guy's Hospital Art Society, of which she was Treasurer from its foundation six years ago. She was meticulous in attending committee meetings and helping to arrange and hang the annual exhibitions to which she always contributed a number of her own paintings, which were often picked out by reviewers as of outstanding merit for an amateur. The Art Society hopes that Miss Morton, who is a Vice-President, will often be present at meetings and exhibitions. She exerted an influence for good far outside her own field of work and she is much missed following her retirement from Guy's last year. Her numerous friends at Guy's wish her many years of happy retirement.

AIR POLLUTION

Dr. J. E. Epsom

Medical Officer of Health for Bermondsey

Few people nowadays are unaware of the blessings of really clean air; a trip outside the London area is usually necessary to obtain it.

What of the permanent residents of inner London who breathe polluted air by day and night, year by year? Obviously they are going to suffer pulmonary effects on a greater scale than rural or seaside dwellers. Statistics amply confirm this supposition insofar as bronchitis and cancer of the lung are concerned (see note on page 195).

Pollution from Chimneys

In so important a matter what has been done, what is being done and what will be done to attenuate the serious long-term effects of air pollution? The answer lies in the hands of the residents themselves to demand cleaner air and to act accordingly. There has indeed been a demand and action in Bermondsey. The Council, through its Public Health Committee and its officers, has effected considerable achievements already in lessening air pollution. The effort continues at an ever-greater pace and, well before the original target date for completion in 1970, the whole of the Borough will be covered by smoke control areas.

But, of course, controlling the visible smoke from chimneys is not the entire answer to air pollution; invisible sulphur oxides present a considerable problem in themselves. However, recent research suggests that sulphur is more dangerous when combined with carbonaceous particles as in non-controlled smoke emissions.

A lot of nonsense has been talked about the efficacy of smoke control under the Clean Air Act of 1956. It is now established beyond any reasonable doubt that the use of smokeless fuel in properly approved appliances has definite beneficial effects for the following reasons:—

(i) Bituminous elements having been removed, the fuel burns clearly, i.e., without the greyish/black, yellow tinged smoke.

(ii) Efficiency of the old type of coal fire grate is about 25%, whereas the new approved closed appliances are about 70% efficient. The gain of this efficiency means that only about half the quantity of fuel need be burnt to obtain the same heat and hence sulphur emission will be cut by one-third to a half.

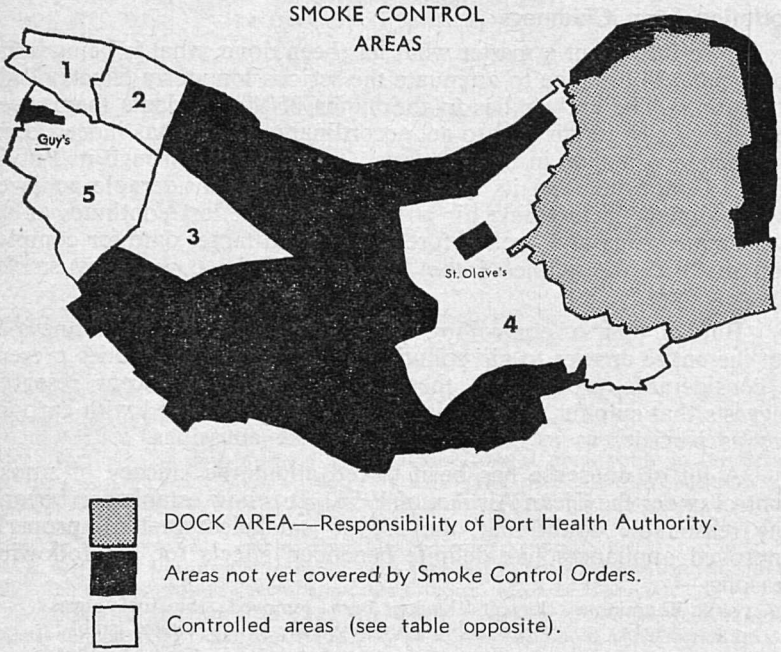
(iii) Existing industrial and commercial establishments are inspected by the Public Health Inspectors and advice for the improvement of the plant is given. If this advice is ignored, prosecution can be undertaken. Plans for new premises are only passed if boilers and fires are of the approved type.

As far as Bermondsey is concerned, the oil-fired burners of St. Olave's Hospital have an extremely good record and cause no trouble

at all. It is not by chance that the hospital is in the centre of a big smoke control area. This is seen on the map as the No. 4 area of 237 acres.

Likewise it is not by chance that at the west end of the Borough the Nos. 1, 2 and 3 areas were already in operation from the dates stated on the map. On October 1st this year, No. 5 area comes into operation and this will include New Guy's House and the College. Thus a continuous area of smoke control will stretch along the Borough boundary from London Bridge, through Great Maze Pond, Crosby Row, Long Lane, Weston Street to the Old Kent Road, and eastwards from this boundary to some 250 acres. This should be of undoubted benefit to patients and staff alike at Guy's, as well as residents and other workers in the area.

METROPOLITAN BOROUGH OF BERMONDSEY



When an area is surveyed for smoke control all houses and premises are visited and a plan prepared. Each fireplace is inspected and an estimate obtained to convert it, if necessary, to an approved appliance, either solid fuel, gas, electricity or oil. When complete, the Minister approves the plan and a date is fixed for the operation of the Act. This involves an immense amount of work. Always the Inspectors have another area coming along so that work continues on two areas at the same time.

From an operative date the essential features are:—

(i) It is an offence to emit smoke from any chimney and the offender is liable to prosecution;

(ii) Only approved smokeless fuel to be used;

(iii) Approved methods of lighting fires to avoid unnecessary smoke (e.g. gas pokers).

Having dealt with the domestic dwellings, the problem of the large, solid fuel boilers and oil-fired boilers as used in big establishments and factories remain. The conversion over to oil does not necessarily mean an improvement in the sulphur content. *Solid fuel* and the *crude oils* (cheaper oils) contain about 3 per cent of sulphur. To effect an improvement therefore it is essential for conversion that oil to be used should contain not more than 1 per cent. This is aimed at and has shown considerable improvement in the sulphur emission. Some oils are virtually sulphur free but are in short supply. By suitable refining, others can be brought to a low percentage of sulphur but their availability is limited. Kerosine only contains about 0.1 per cent of sulphur but would not be suitable due to possible explosive risks with the type of boilers in use. A new package boiler installed

SMOKE CONTROL AREAS

Area number, and operative date.	Area.	Type of premises within Area.	Number of adaptations necessary in private dwellings.	Estimated Cost of Adaptations.
AREA No. 1. London Bridge 1.10.1958	33.9 acres	Industrial 4 Commercial 144 Dwellings 19 Others 3	7	£112 10 0
AREA No. 2. Tooley Street 1. 7.1960	39.5 acres	Industrial 11 Commercial 118 Dwellings 775 Others 2	279	£4,180 13 6
AREA No. 3. Abbey Street 1.10.1961	68.5 acres	Industrial 51 Commercial 98 Dwellings 1107 Others 10	675	£5,324 4 6
AREA No. 4. Southwark Pk. 1.10.1962	237 acres	Industrial 24 Commercial 249 Dwellings 2984 Others 32	2047	£33,730 0 0
AREA No. 5. Leathermarket 1.10.1963	105.5 acres	Industrial 81 Commercial 233 Dwellings 1722 Others 19	1571	£18,333 1 3
TOTALS	484.4 acres.	Industrial 171 Commercial 842 Dwellings 6607 Others 66	4579	£61,680 9 3

Total area to be covered by Smoke Control Orders—1,135 acres.

in our Cleansing Station uses 35 second flash oil and only has 0.85 per cent of sulphur.

Thus, a methodical attack is being made on *smoke* and *sulphur* and the results show clearly that it is worthwhile.

The extent of the work and estimated cost can be seen from the map and table. From 1st October, 1963, a total of 484 acres will then be in operation out of an area of 1,135 acres, with a total estimated cost of £61,680. The cost of an adaptation in, for example, a £10 estimate will be shared as follows (following approval by the Ministry of Housing and Local Government):—

Owner/Occupier ...	£3	0	0
Council	£3	0	0
Ministry	£4	0	0
	£10	0	0

Pollution from Vehicles

Many people, like myself, have been seriously worried by the vehicle pollution problem. Following discussions with the Director of the M.R.C. Air Pollution Unit at St. Bartholomew's Hospital, it appears that the chimney is still the serious problem. Atmospheric sampling in Blackwall Tunnel, the Archway, North London, in garages and other confined areas apparently does not yield the irritants and carcinogens that chimneys so universally do. Epidemiologists have studied statistics of garage workers, policemen and many occupations where workers are exposed to persistent and varying degrees of exhaust pollution and, so far, we are told, it has not been proved that with these workers there is a special additional hazard in respect of bronchitis and carcinoma of lung.

However, at last year's Clean Air Congress, the President of the National Society for Clean Air, Lord Cohen of Birkenhead, in a masterly address, pointed out that *Scheper*[1] has said, "about 3,000 chemical particles have been identified which can be dispersed in air; less than 10 per cent of these we know something about and less than 1 per cent of that which we know is relevant". Therefore it is easily seen what the enormity of the task will be to follow up effectively all known pollutants of air. Lord Cohen also revealed some further American work by *Mills*[2]: "in an interesting survey of lung cancer deaths in greater Cincinnatti, it was found that there were highly significant correlations between deaths from lung cancer and three other variables, namely cigarette smoking, urban residence, and the number of miles driven annually in urban traffic. In a recent analysis of his finding he asserts that, in general, urban residents exposed in urban traffic for *over* 12,000 miles per annum exhibit over twice the lung cancer incident rates of those with lesser urban dwelling mileage".

I think it is still wise to suspect vehicle traffic pollution as being dangerous, especially at street level. It is clear, however, that all the specific researches are going to take time. Some means must be made available to lessen the intensity of vehicular pollution on our urban highways as soon as possible. To this end the Los Angeles state

authority have kept me informed of the progress being made. Temperature inversion occurs there most days of the year; mist comes in from the Pacific and is held by the Rocky Mountains surrounding; dreadful conditions have arisen because of the two million or so vehicles pouring out fume which is trapped. Three interesting effects of this smog have been noted there:—

(i) Watering of eyes;
(ii) Plants' normal green changed to a silvery colour;
(iii) New tyres in stock becoming cracked.

Following a thorough investigation during the last three years it was discovered that a chemical reaction was taking place in the smog; the fume, nitrites and sunlight all combining in a reaction to form the complex substance effecting the above three conditions. As a result, various laws were passed, one of which was to provide that by a certain date ahead, all vehicles must be fitted with a state approved exhaust device (either catalytic or flame after-burner, or some other effective invention) to render fume as innocuous as possible. This has led to research and competition to win the approval of the authorities and hence market an effective instrument. There are hopes that a practical solution will be available for world use. Reports so far, however, suggest that, generally, the devices are inefficient when starting from cold, and in slow running. Their effectiveness is in the region of 12,000 miles.

However, exhaust pipe fume is not the only contaminent from vehicles; even in a new engine it is thought that "blow by" fume amounts to about 25 per cent of the total exhaust from the engine. "Blow by" fume comes out of the engine breather from the sump and contains, therefore, a higher ratio of the *mineral oils*. This can be overcome to some extent by connecting the breather pipe to the air induction near the manifold and burning the fume in the cylinders. Also spilt oil on a hot engine leads to vaporisation. Worse still, older engines with the invariable oil leaks and overheating, vaporise much oil. The two-stroke engine as well, in which oil is placed in the petrol in definite amounts, presents further unpleasant fume with high mineral oil content, especially when starting up from cold.

It is through the conventional radiator grill that polluted air, mostly from vehicles in front in urban areas, passes at great speed and carries also some of the oil fumes from the engine onwards into the car since very few cars really have an effectively sealed body from the engine compartment. This gets worse in time as the various pedal shaft openings loosen up and the rubber seals disintegrate or slip off.

The additional contamination from "blow by" oil may be a serious one in view of the report[3] that certain mineral oils used in engines and gearboxes may possess *carcinogens* in varying amounts. There is also the carbon monoxide problem. Clearly, much research is needed here to confirm or dispel the danger. Body compartments on vehicles should be completely air-tight sealed from the engine. Air intake

for heaters should not come from the engine compartment. Car manufacturers should find no difficulty in making the air intake from more suitable sites, and ducting even this air through inexpensive air conditioners (filtered by activated charcoal). A simple procedure on these lines would reduce the pollution burden for drivers who have to work persistently in dense traffic in urban areas.

However, all this does not help local residents and workers who have the additional heavy burden of vehicle air pollution to cope with. It is certain, with a vigorous programme of smoke control, that the chimney pollution can be effectively reduced. Progress in overcoming the pollution due to vehicles is at present virtually nil. A walk during business hours along Borough High Street, Tooley Street, Long Lane, Tower Bridge Road, Old Kent Road, or Jamaica Road, reveals the extent of the daily pollution. Something must be done either to reduce the exhaust fume and/or limit vehicles, and it would seem that there is not much chance of either in the immediate future. If ever a benefactor, whether State or private, is needed to fully endow research to clear our roads of this scourge, it is needed now. With hopes focused on the Los Angeles competition, should a practical means be invented to eliminate vehicle fume it would take some time to prove and increase its effectiveness. Then, if really effective, it would take further time to tool up for new vehicles and to fit the device to old vehicles.

I am certain that it will be possible to overcome all the difficulties and find the answer but, in my opinion, *the tempo of research has been, and still is, far too slow.*

Smoking

Finally, it will be clear from what has gone before that the hazards of air pollution are many. But why add to them unnecessarily? In a debate as long ago as 1954 at the Royal Society of Health, on smoking, I found it necessary to make the point that although there are the intrinsic hazards of smoking cigarettes per se, nevertheless there is still this further hazard which must be directly linked to all I have said previously, namely the inhalation of polluted air through the red hot ball of the cigarette tip. Here temperatures reach *600° to 800° C.* and the pollutants mix, heat, activate, or combine and react.

The opportunities of some of the 3,000 known chemicals (mentioned before) are endless. It is known in industrial medicine that lead poisoning can develop quickly by smoking in certain parts of a lead factory. Similarly, smoking in various occupations where certain dusts or gases may be in the atmosphere increases the risk and speed of toxic reactions. Smoking in the presence of many of the halogenated hydrocarbons causes phosgene to be produced. Smoking in the presence of the dust of "Fluon", a plastic (polytetrafluorethone), is liable to cause symptoms similar to metal fume fever. Of course, the Factories Act 1961, and the regulations made under it, forbid smoking in specified occupations.

These examples relate to very short-term effects in risk occupations. However, persistent smoking in the ordinary way in our air polluted cities over the years must present a very real additional risk as far as bronchitis and cancer of lung are concerned.

REFERENCES.

1 SCHEPER, G. W. H. (1961). *Symposium on Medical Aspects of Air Pollution. Meeting of the American College of Chest Physicians, June 24th, 1961, New York City.*

2 MILLS, C. A. (1960). *Amer, J. Med.* SX. 239, 316.

3 BALDWIN, R. W., CUNNINGHAM, G. J., PRATT, D., *Studies on Carcinogenic Action of Motor Engine Oil additives.*

Since Dr. Epsom submitted his article for publication, he has supplied us with the latest figures on death rates from Bronchitis and Lung Cancer in six London boroughs and Standardised Mortality Ratios in these boroughs. In view of their relevance to his article and to the feature " Life and Health in Bermondsey and Southwark " in our last issue, we print them below.

EDITORS.

DEATH RATES PER THOUSAND/POPULATION.

	1960		1961	
	Bronchitis	Cancer of the Lung and Bronchus	Bronchitis	Cancer of the Lung and Bronchus
England and Wales	.57	.48	.67	.49
Bermondsey ...	.8	.8	.9	.75
Bethnal Green ...	.88	.80	1.31	.78
Islington ...	.85	.81	1.10	.75
Poplar ...	.85	.63	1.20	.59
Southwark ...	.94	.84	1.16	.79
Stepney ...	1.09	.56	1.09	.87

STANDARDISED MORTALITY RATIO.

Statistics supplied by General Register Office, Somerset House.

	1961					
	Males			Females		
	expected	actual	S.M.R.	expected	actual	S.M.R.
Bermondsey	295.20	317	107	297.37	288	97
Southwark	484.39	630	130	494.18	618	125
Stepney	525.72	661	126	446.75	542	121
Poplar	363.41	379	104	339.42	335	99
Bethnal Green	276.45	290	105	288.55	278	96
Islington	1,223.29	1,337	109	1,296.82	1,253	97
Admin. County of London	—	—	105	—	—	96

The Standardised Mortality Ratio (S.M.R.) shows the number of deaths in each area as a percentage of the numbers which would have been expected had the sex/age mortality of England and Wales been experienced in these areas.

11th April, 1963.

THE BIOCHEMISTRY OF GENES

By W. L. G. GENT.

Department of Biochemistry and Chemistry.

The relationship between genes and proteins is discussed in terms of their physical structure and biochemical activity. The mode of transfer of information from the nucleus directing protein synthesis is described with special reference to structural and regulator genes.

Because most of the chemical components of a cell or tissue are either chiefly protein or have been formed by the enzymic action of proteins, it has long been clear that the genetic information encoded in the chromosomes of a cell is manifested primarily through the formation of proteins. As no evidence has been found to suggest that there are differences between the chromosomes of cells (in the same organism) either in different tissues or at different stages of development, but all evidence suggests that different proteins may be synthesised in these various circumstances, it follows that since any set of chromosomes must contain the information required for the synthesis of every protein to be found in the organism, then the information must determine both the kind of protein and when it is synthesised. For these reasons genes which determine the appearance of some observable character must be of two kinds: structural genes, defining the protein molecules chemically, and regulator genes. Within recent years some understanding has been achieved of the factors involved in genetic action; it appears that the total information* required to specify an organism is held in the chemical structure of deoxyribonucleic acid (DNA) located in the chromosomes. The physical arrangement of DNA in relation to the observable chromosomes is not known at present.

The Structure of DNA

The *primary* structure of DNA is a linear array of nucleotides any one of which contains a phosphate group linked to the sugar deoxyribose which in turn attaches an organic base (Fig. 1). The base may be either of the purine or pyrimidine type, commonly adenine or guanine (purine bases) or thymine or cytosine (pyrimidine bases). The *secondary* structure involves the intertwining of two such arrays to give the DNA molecule as it exists in chromosomes. The two polynucleotide chains are held together by interaction between the

*Not quite. Some information must be carried presumably in the cytoplasm of the zygote, to determine which of the genes operate initially.

organic bases of the two chains to form a helical structure (Fig. 2). Because of the physical and chemical properties of the bases it is only possible for guanine in one chain to interact with cytosine on the other and for adenine to pair with thymine. Consequently the sequence of

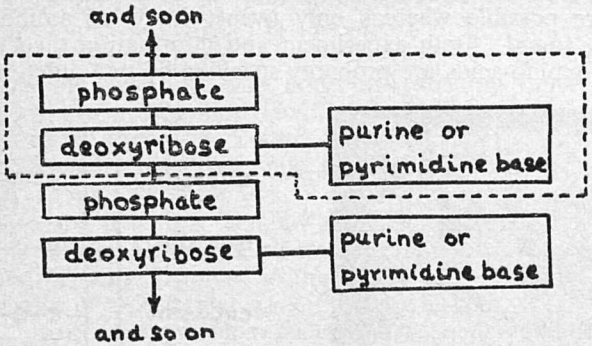


Figure 1. The nucleotide unit and polynucleotide chain.

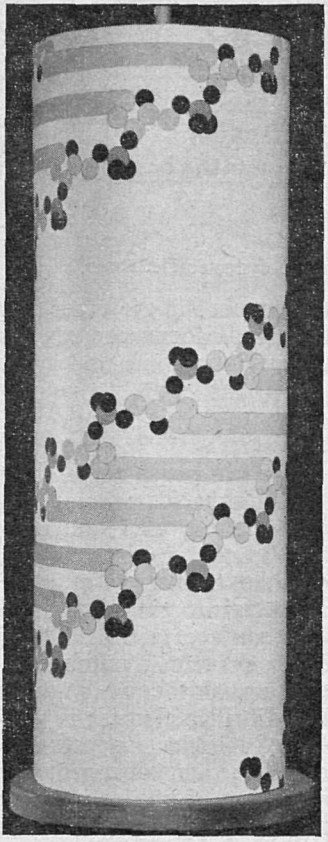
bases in one chain is conjugate with the sequence in the other (Fig. 3). It is these sequences which code the genetic information, the use of which enables a cell to synthesise a specific protein under specific conditions.

The Structure of Proteins

All proteins are composed of one or more polypeptide chains in each of which there is a linear array of amino-acid residues (Fig. 4). The particular sequence of amino-acids constitutes the *primary* structure. In the majority of proteins in their natural state interaction between peptide linkages brings about the formation of a helical secondary structure in which the characteristic side-chains of the various amino-acids project from the surface of the effectively cylindrical molecule so formed. In fibrous proteins a number of such cylindrical structures cohere by interaction of the amino-acid side chains to form a *tertiary* structure. This fibrillar element is the basis of the microscopically observable fibres of muscle, connective tissue, etc. In globular proteins, which include the enzymic proteins, the *tertiary* structure results from the convolution of one or more secondary structures to form a discrete molecule (Fig. 5). This tertiary folding is also the result of interactions between amino-acid side-chains. The specific topography of the tertiary structure enables the attachment of non-protein components such as haem in haemoglobin, ribosenucleic acid in viruses, etc., to give a further *quaternary* level of organisation in which the functional activity of the particular protein appears. It is likely that the development of secondary, tertiary and quaternary structure is a spontaneous process resulting from various electrical interactions made possible by the sequence of amino-acids in the primary structure. This is determined by the nucleotide sequence in DNA, the segment defining one polypeptide chain constituting a structural gene.

The Code in Structural Genes

Experiment and theoretical considerations suggest that a sequence of three nucleotides are required to specify one amino-acid in a polypeptide chain. As there are four possible nucleotides, $4^3 = 64$ such triplets are possible whereas only twenty kinds of amino-acid are commonly found. Both experiment and information theory indicate that some amino-acids are probably specified by two different triplets,



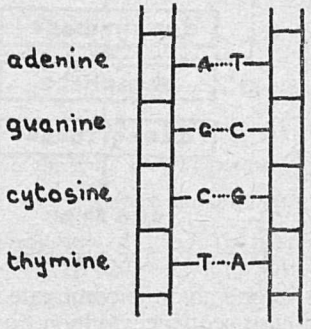


Figure 3.
Conjugate relationship of polynucleotide chains in DNA.

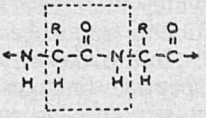


Figure 4. The amino-acid residue and polypeptide chain.

Figure 2. Helical arrangement of polynucleotide chains in DNA.

whilst others are specified by four triplets. It seems possible that the triplets are differentiated from one another by the chemical groupings on the molecules of the organic bases, but this is not wholly understood.

Synthesis of Protein

Experimental evidence indicates that DNA itself does not act as a site of protein synthesis but directs the formation of so-called messenger ribosenucleic acid (m–RNA). This polynucleotide has a single chain of nucleotides in which the sugar is ribose and in which uracil replaces thymine. The DNA code is transcribed into the

nucleotide sequence of m–RNA which diffuses out of the nucleus and attaches itself to the ergosomes* located on the interior surfaces of the cell. The ergosomes themselves contain RNA which is apparently not specific, i.e. not related to the synthesis of any particular protein. The m–RNA absorbed by the ergosomes directs the assembly of amino-acids which are carried to the site by a short nucleotide chain (s–RNA), a different variety of s–RNA existing for each amino-acid. m–RNA is of short life, one molecule probably only directs the synthesis of the polypeptide chain and is then decomposed. An advantage to the organism of such an arrangement is that any errors of transcription from DNA would not be indefinitely propagated as incorrectly assembled protein.

It appears that this general scheme of directed synthesis is involved in all organisms and it also appears likely that related structural genes, i.e. those involved in the production of the different polypeptide chains of a particular protein, have adjacent loci in the genetic material. In micro-organisms evidence has been found that part of the DNA adjacent to a structural gene constitutes an initiation segment or *operator*. This marks the beginning of the structural gene and probably also determines whether or not the sequence of polypeptides is C-terminal or N-terminal.

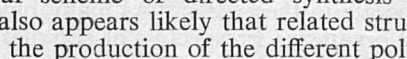
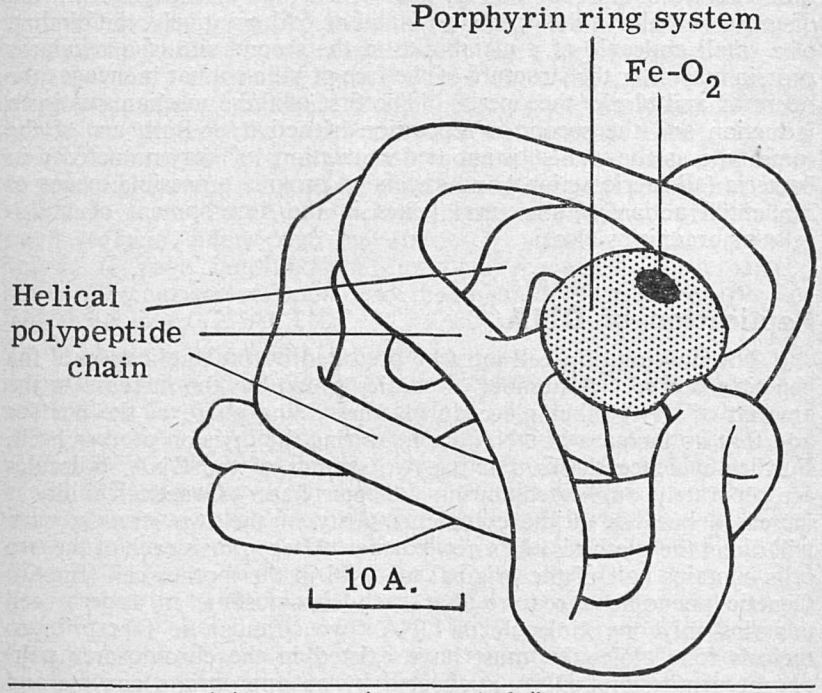


Figure 6. C- and N- termination of polypeptide chain.

Figure 5. Tertiary structure of a globular protein. (*see Page* 197).



* An ergosome is an *organised* ribosome.

Where several structural genes are involved in determining the composition of a protein, the operator is common, the whole sequence of operator and structural genes forming a so-called *operon*.

Regulator Genes

No formal demonstration of regulator genes in multicellular organisms has yet been made perhaps because of technical complexities, but embryological studies on the developmental properties of transplanted nuclei show some progressive genetic changes during morphogenesis. Experimental work on enzyme induction and repression in micro-organisms, however, indicate that regulator genes operate in these cells. As many biochemical mechanisms function in all organisms irrespective of complexity and diversity, it could well be that such an important evolutionary result is incorporated in multicellular organisms.

The regulator gene has as part of its sequence the operator segment of the operon. Protein resulting from m–RNA transcription of the regulator gene is believed to possess two active sites: one which recognises the operator and can bind to it, the other capable of binding a small molecule of a metabolite. The binding of the regulator protein to the operator inhibits the whole operon but upon the metabolite molecule becoming available, its binding to the second site modifies the structure of the regulator protein which then disengages from the operator and allows the operon to function. Alternatively, the binding of a small molecule of a metabolite to the second site of a regulator protein may alter the structure of the free protein so that it engages the operator and blocks the operon. The first of these mechanisms is an induction and the second a repression of activity. Both are of the same type as the well-substantiated regulations of enzyme activity in bacteria (allosteric action), and appear to provide a possible means of sequential action of structural genes in the development of multicellular organisms also.

Replication of DNA

The division of a cell must be preceded by the duplication of the genetic material. A number of studies show that the increase in the amount of DNA takes place during the resting phase of the nucleus and that no increase of DNA occurs during the division process itself. Further evidence shows that the two strands of the DNA molecules are separately duplicated during the interphase. Genetic stability is increased because of the complementarity of the two strands; each will direct the synthesis of its new partner. After mitosis each of the two cells contains half of the original material in the mother cell (Fig. 7). Genetic phenomena require that each chromosome in a germ cell contains only one molecule of DNA (two strands), so that prior to meiosis four molecules must have existed in the chromosome pair. As the synthesis of DNA is effected by an appropriate enzyme and

can be accomplished *in vitro* to an unlimited extent the limitation of synthesis *in vivo* is presumably under cellular control.

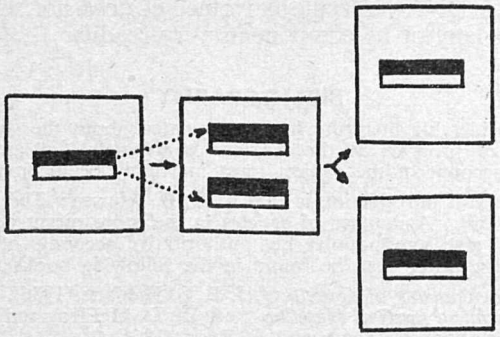


Figure 7. Replication of DNA in the nucleus.

Mutation

The determination of one amino-acid in a polypeptide chain by a triplet of nucleotides in DNA means that the least mutation involves one, two or three nucleotides, the substitution of one incorrect unit either causing the triplet to be uninformative or to bring about the incorporation of an incorrect amino-acid. The effect of a locus of zero information is not known, but presumably any of the four nucleotides could be incorporated in the m–RNA and would also cause the inclusion of one wrong amino-acid. Such incorporation has very variable effects depending upon the position of the amino-acid in the polypeptide chain. Evidence of such effects is of two kinds. Firstly, in the few proteins for which the exact sequence of amino-acids is known, comparison of the primary structures of the same functional protein (e.g. various insulins) from different zoological species indicates that some parts of the amino-acid sequence are invariant whereas one small segment differs from one species to another. Other proteins appear to have non-functional terminal sequences which can be removed by enzyme action *in vitro*, the remainder retaining the physiological activity (e.g. ACTH).

In haemoglobins, the subjects of most extensive study in this respect, it seems that certain amino-acids in certain positions are involved in the folding of the secondary into the tertiary and higher order structures. A change in even one of these (as in sickle-cell haemoglobin) may bring about a very marked change in the function of the molecule as a whole. Changes at other positions, however, do not seem to exert any effect. Larger mutations, involving a structural or a regulator gene or even the whole complex presumably cause either substitution or deletion of one protein, the effect upon the cell or organism being of obviously very variable magnitude. It has been noted already that the translation of DNA into protein through the agency of m–RNA can only cause transient errors. Permanent errors can only arise from errors in the DNA sequence, and because of the

way in which DNA molecules are replicated and transferred into the gametes, such errors may arise either by incorrect copying during replication or by the action of extrinsic agents on the polynucleotide chain. Once a DNA molecule is formed it does not seem to chemically exchange any of its components very readily.

BIBLIOGRAPHY

A very considerable literature has accumulated about the subject. Furthermore the rate of progress at the moment is so high that any more or less comprehensive account of the subject must inevitably be incomplete.

The best general introduction is that of C. B. Afinsen: *The Molecular Basis of Evolution* (1959). A number of articles in the more recent issues of "*Scientific American*" give semi-popular but authoritative accounts of specific topics. More detailed discussion is to be found in the following books:—

"*The Biochemistry of Genetics*", J. B. S. Haldane (1956).
"*The Chemical Basis of Heredity*", ed. W. D. McElroy and B. Glass (1957).
"*Cell Heredity*", R. Sager and F. Ryan (1961).
Cold Spring Harbor Symposia on Quantitative Biology, Vol. XXVI (1961).
"*The Structure and Synthesis of Macromolecules*", Biochemical Society Symposia. No. 21 (1962).

It is likely that during 1963 an account will be published of the papers delivered at the International Symposium on Information Theory in Biology held during the summer of 1962. Most of the papers were concerned with the topics noted here.

In our next issue we will be publishing the third article in this series on 'Human Chromosomes and their Abnormalities'.

REPRINTS

Reprints are being prepared of the two main articles in our last issue:

Bermondsey and Southwark IV. "*Life and Health*", by Roger Blaney, and "*Fundamental Genetics*", by B. J. Rickard.

It would be appreciated if those who are interested in obtaining copies of these reprints would communicate with the editors so that they may more accurately assess the demand for them.

It is hoped to publish all the subsequent articles in the series "A Scientific Background to Clinical Medicine", in reprinted form, as well as other main articles, as and when the demand arises.

PUPILS PHYSICAL SOCIETY

Laidlaw and Beddard Prizes

These two prizes, of £5 each, are offered for the best paper on a subject of pathological, medical or surgical interest, and for the best paper on the subject of a clinical case, or cases, respectively.

The papers, which will be read before a meeting of the Society on the 30th April, should be brief, lasting not more than 15 minutes, and titles and brief abstracts should be submitted to the Medical School Office by April 23rd.

The meeting will be held at 5.30 p.m. in the clinical theatre, New Guy's House, when Dr. Scott, Dr. Lessof and Mr. Maynard will be present to judge the entries. All students interested, whether presenting a paper or not, are invited to attend, and any further information required can be obtained from A. S. Russell.

CRITICISM

By NIELS JENSEN

Jesu Meine Freude

J. S. Bach

Guy's Hospital Music Society

March 18—19, 1963

The latest musical offering by this enterprising Society was every bit as taxing as its immediate predecessors. For an amateur choir to undertake half an hour of complex contrapuntal singing " a capella " in public is to court disaster. That they largely carried it off is a tribute to Mr. Robert Sells, who took over rehearsals at a late stage, and directed programmes,—this time without a baton.

Written in 1723 for five voices, this motet comprises varied treatment of the six verses of the hymn "Jesu Meine Freude", interspersed with words from The Epistle to the Romans, acting as a commentary on the hymn. Affirmative, joyful pieces alternate with humble and supplicatory. The ensemble was naturally at its happiest in the decisive and simpler music, rather than in the complex contrapuntal episodes, when the middle parts were somewhat insecure, and could clearly have benefited from more rehearsal. The trio No. 8, "If Therefore Christ Abide in You", was particularly striking as only a small section of the choir sang, contrasting most successfully with the whole.

The acoustic and setting of Southwark Cathedral gave added effect to the second performance, which was also, not unnaturally, the rather more confidant of the two. Both here and in the Hospital Chapel, the choir had to contend with extraneous noises, either of concrete mixers or Southern Railways.

One is left wondering why such relatively small audiences were drawn. I am sure there are many potential enthusiastic supporters of the Society's activities around the Hospital could they be enticed just once, who would enjoy the performances as much as the participants obviously do.

NOTICE

LONDON TO BRIGHTON STROLL, 1963

The Stroll this year will be taking place on May 10/11th, starting as usual from the Tower of London at 7 p.m. on the 10th. As in previous years, Guy's will have their stop 1½ miles south of Gatwick Airport.

It is hoped that the Guy's entry will again be in excess of 300. Entry forms will be available at Smiths Bookshop from Wednesday, April 24th, and must be returned by Friday, 3rd May.

In order to meet the ever increasing expenses of running the Guy's stop, it has been found necessary to charge an administration fee of one shilling per head which will be payable on receipt of the Stroll number.

PATRICK ROWE.

CORRESPONDENCE

Medical Refereeing

SIR, I was delighted when I first saw the signature of H. St. H. Vertue at the foot of a Medical Referee's report on a patient of mine, and I should like to state at once that up to now we have been in complete agreement as to the fitness for work of the patients of mine who have appeared before him.

Nevertheless, I wonder whether he is not viewing his side of the picture through somewhat rose-tinted spectacles, and I feel sure that his somewhat sweeping criticism of G.P.'s diagnoses as they appear on certificates is unfair. In many cases the initial diagnosis is necessarily vague until X-rays and other investigations have been completed. With the present wait for Hospital out-patient appointments, this may take several weeks. I believe "Anxiety state" to be a true clinical entity, though not so common as Depressions. Upper respiratory tract infection is a very descriptive term, and URTI a well recognised abbreviation—at least in G.P. circles.

However, the point I really want to make is that in my experience the only apparent common denominator for calling up a patient to be examined by a Medical Referee is that he has been certified as unfit for work for a month or more and is not confined to house or bed. The diagnosis on the certificate seems to be immaterial. How is it learnt that the patient is up and around? To my mind there is only one answer to this, and I should very much like to know whether the Ministry of Pensions does indeed employ visitors, inspectors, "snoopers", call them what you like, to determine this fact.

Yours, etc.,

J. A. J. HAMMOND.

North Ridge,
Hawkhurst, Kent.

Canada

SIR, Lest there be a doctor's " gold rush " to Canada reminiscent of the Klondyke, perhaps your readers should be reminded that there is quite a difference between £18,000—£30,000 a year and $18,000—$30,000, which latter figures Dr. Leckie presumably intended in his recent article on " the gentlemen physicians " of General Practice of Canada.

I should also be remiss if I did not advise your readers that the majority of these so called "gentlemen physicians", at least in the Eastern half of Canada, work a 70 to 80 hour week to earn that kind of money, so apart from three to four weeks' holiday a year, they don't have too much spare time to be "gentlemen". Except for the very few "mercenaries" who milk the public with easy-money injections or questionable surgery (and such men are to be found in all parts of the world), the average successful Canadian G.P. starts his day around 8 a.m. and is lucky to finish much before midnight except at week-ends and holidays. Personally I would advise any aspiring emigrant to obtain a specialist's certificate if his ambition is " big money " and a " gentleman's " life in Canada!

Yours, etc.,

DR. HEREFORD STILL.

6180, Regina Terrace,
Halifax, Nova Scotia.

We apologise for a printers' error by which the sums of money were inadvertently stated in pounds—EDITORS.

REVIEWS

LOCAL ANALGESIA.

By CLIVE JOLLY. H. K. Lewis. 1962. Pp. 110. *Price* 15*s*.

This compact book on local analgesia and anaesthesia, will be found most useful by many doctors. It is characterised throughout by simple straightforward advice, not only on the technical performance of nerve blocks, but also on the overall care, comfort and management of the patient.

In the excellent preface, Dr. Jolly states that he has set out to produce "a book of moderate size that covers a wide field of local analgesia and which combines rapid reference with practical detail"; this reviewer feels that he has been more than successful.

The first three chapters are concerned with the technique and management of patients for local analgesia; the pharmacology of the common local anaesthetics and vasopressors, and a discussion of the more important complications.

The following chapters are then concerned with detailed descriptions of regional blocks; analgesia in the head and neck, analgesia of the upper extremity, paravertebral blocks, and analgesia in the thorax, abdomen, and lower limbs. Finally, there are chapters on surface anaesthesia, subarachnoid analgesia with the case for and against fairly presented, epidural analgesia and the therapeutic use of nerve blocks.

Many anaesthetists, residents and casualty officers will be glad to have this book in their lockers for quick reference, and although this reviewer was a little unhappy about the grammar in some places, he feels Dr. Jolly is to be congratulated on covering a large and difficult subject so effectively.

B. R. P. MURRAY.

A POCKET OBSTETRICS.

By ARTHUR C. H. BELL. 5th Edition. J. & A. Churchill. Pp. 159. *Price* 12*s*. 6*d*.

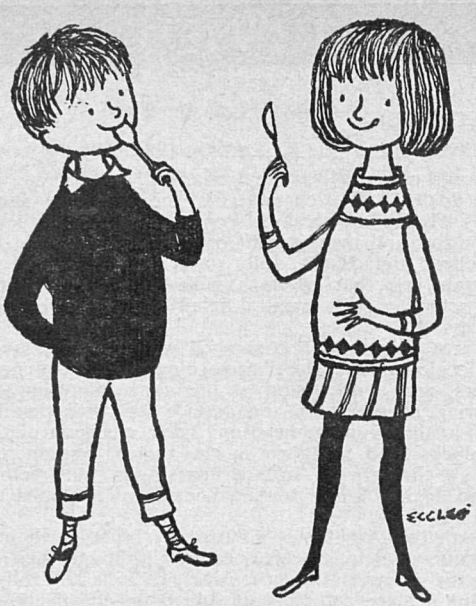
Before assessing the value of any book it is first necessary to decide what the author is trying to achieve, then to see whether this has been done, and finally, how well. Now this is billed as a pocket book of Obstetrics and, therefore, presumably intended to be carried as a reference guide in the practice of obstetrics, and also, as stated in the preface, as a revision guide for students. These two purposes would seem to be to some extent incompatible because the most useful information in day to day practical obstetrics will differ substantially in relative proportions from that required by a student for revision purposes.

In many ways the proportions are strange; for example to devote more space to the indications and practical procedure for performing craniotomy and embryotomy than to the normal management of the third stage would appear to be extravagant in a pocket book where space is at a premium.

Unfortunately there are a number of outmoded ideas mentioned, which, although of no great importance eventually give one the overall impression that the book is not really on the front line. In addition there are a number of points where the teaching differs from that given at this Hospital and as such if used for revision may well cause confusion. However, there are many useful sections which are written succinctly with careful orientation of facts.

Thus if used intelligently by someone with a good basic knowledge of obstetrics it might be a great help. Unfortunately most of these people would not really need a pocket book.

MICHAEL MAISEY.



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BIOCHEMISTRY.

By I. S. KLEINER and J. M. ORTEN. Henry Kimpton. 1962. Pp. 867. *Price* 73*s*. 6*d*.

Like most biochemistry books, this large volume is written so that it naturally divides itself into two sections. The first half deals with physico-chemical phenomena as applied to living tissues, and gives a general discussion from a physiological standpoint of the biochemistry of the elements of the diets and the process of digestion and absorption. There is a very interesting chapter on tissues in which each of the four main classes of tissues is chemically dissected. The chapter is made especially palatable by an attempt being made to relate structure to function, and generally this practice is adopted throughout the book. Since it is so easy for any medical student to lose sight of the significance of biochemical findings in relation to physiological practice in medicine, this approach is especially refreshing.

The second half deals with the detailed chemistry of the various metabolic processes occurring within the cells, but the presence in the latter half of two large chapters on the metabolism of the inorganic components of the cells and their association with water balance, and on the composition of urine, raise this above the general level of biochemistry books. Chapters on hormones, acid-base metabolism with respect to kidney and respiratory function, and metabolism, considered from the point of view of energetics, are also included, and with each of these emphasis is laid on the physiological aspect, rather than purely detailing the chemical form and properties.

Each subject is adequately documented, both general and special references being included, at the end of each chapter, and for a combination of clarity and information, your reviewer knows of no better book of physiological biochemistry.

A special feature of this book is the production of all formulae and chemical diagrams in red, and this procedure most certainly serves to emphasise the chemical reactions that are believed to occur.

Both in price (73s. 6d.) and in quantity, it is not a book that is recommended to 2nd M B. students to buy, although it is thoroughly recommended that such students glance occasionally through its pages to give clarity and further information on any particular point.

The presence of references, and a large appendix of nutritional tables should make Kleiner and Orter's Biochemistry a valuable reference book to specialist students in particular fields, and a recommended asset to any library.

MARTIN H. JORDAN.

MODERN TEXTBOOK OF PERSONAL AND COMMUNAL HEALTH FOR NURSES.

By M. A. PRIEST. Heinemann Medical Books. 1962. *Price* 15*s*.

This book is obviously intended as a basic textbook on Personal and Communal Health for student nurses preparing for the examinations of the General Nursing Council. The lay-out and classification of the subject matter are pleasing and the book is well produced.

However, the text abounds with errors of syntax which students with a command of their language might well find irritating. Also, in places, inaccurate phraseology results in misleading statements. For example, when explaining the Basal Metabolic Rate, the author states " For an adult man the rate is approximately 1,800 Calories, for a woman 1,500 Calories". The question of time is implied earlier in the paragraph, but the student with little previous knowledge may well not appreciate from this sentence that the question of time is fundamental to a rate.

There are one or two other disappointing features. For example, the use of abbreviations such as P.P.D. and B.C.G. with no mention of what the letters stand for. Also, at no point is there any suggestion that the horizon extends beyond the shores of Great Britain.

With these provisos, however, this is a book which might well be recommended especially to overseas students, because it gives a fair basic picture of the National Health Service and of Public Health problems in this country to-day.

D. MACHIN.

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SPORT

RUGBY

Following a succession of eight defeats since the frozen spell, it was somewhat unexpected that the fifteen produced a winning display of open, exciting rugby in the first meeting with Esher in the last game of the season. With almost forgotten ability, the ball was snapped up, when loose, and moved freely amongst backs and forwards. Biggs, Edgar and Baker scored tries with Biggs kicking a conversion and penalty, and Edgar adding a further penalty goal from way out. The victory was more satisfying in the knowledge that Esher had already beaten all the other major Hospitals. A full report appears below.

FOOTBALL

With recent victories over the Hospital Staff XI and Tout Venant, a visiting Dutch Club, the Football Club has completed a highly successful season. The Staff XI were beaten 3—1, and the Club thereby retained the Governor's Shield for their challenge match. The Dutch team, from Maatricht, were being entertained for the second occasion by the Hospital following two visits by the Soccer Club to Holland in the past two seasons. Early in the game the visitors lost their captain through injury, but no goals came in the first half. On commencing the second half, the Hospital quickly took the lead, when J. Cutter guided home a centre from the left wing, A. Atkins, and soon after, A. Palmer went through on his own to score. The third and final goal came towards the end of the game, when R. Shepherd drove a powerful, swerving shot from the edge of the penalty area. The Hospital and their Dutch guests also took part in a six-a-side tournament organised by the London Hospital. The Hospital's 1st VI won two rounds to reach the quarter finals, where they lost to the Old Forresters, but a 2nd VI were knocked out in their first game.

Although several matches were missed during the cold spell in January and February, the Club's record for the season shows nineteen of twenty-two matches won, with 114 goals scored, against twenty goals conceded. The record is a true assessment of the team's performances. Few team changes have been necessary, and a solid, well-knit defence has fed a lively forward line, in which J. Cutler at centre-forward, seized many opportunist goals. The neat, efficient team-work and the fitness of the side were largely attributable to R. Shepherd, who captained the eleven with considerable enthusiasm throughout the season. Ironically, neither the Hospitals' Cup nor the London University Cup were attained. A shaky defence allowed University College three quick goals in the University Cup quarter finals, where later the match was lost 2—3, and a constant attack in the second half failed to prevent the London Hospital taking a 2—1 victory in the semi-final of the U.H. Cup.

The 2nd XI had a poor season. With many players frequently unavailable, the side failed to settle down. The University Reserves' Cup was relinquished in the quarter finals to St. John Cass College.

The variety of talented players in the Club was reflected in the appearances of nine members in U.H. sides. L. G. Parry, W. W. Davies, P. D. Davies, R. Shepherd and E. Elias were regular representatives, with A. Atkins, J. Cochrane, J. Cutler and N. Trayfoot appearing on various occasions. These players, with remaining members of the 1st XI, will be available next season. The Club's affairs for the past year have been efficiently managed by L. G. Parry (*Secretary*) and P. Sheridan (*Fix. Secretary*).

HOCKEY

The Hockey Club's record for the past season was clearly limited by the severe weather, which caused successive cancellation of matches and training for eight weeks. Ten games were scratched during this period, and two more games were abandoned on rain-swept pitches. With a total of seventeen matches played, the Club won six, drew one and lost nine, scoring twenty-nine goals, against twenty-eight.

The games in the first half of the season revealed an eleven divided between an experienced defence and an attack lacking cohesion and scoring power. Several games were narrowly lost, when scoring chances were not taken. A. Hurst, in

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HISTORY OF GUY'S
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goal, D. Loader and K. Haynes, at full back, and M. Conybeare at centre-half, produced consistently sound performances, and the captain, R. Strickland, moving up from half-back to inside forward, tried hard to add direction and finish to the attack. J. Sedgwick, a full Blue, was injured in the first game, and was unable to make any further appearance during the season.

Fitness and interest unavoidably suffered during the lay-off, and it was unfortunate that the side was thrust into the Hospital's Cup semi-final with the London, on re-commencing fixtures. The Hospital's defence was as dogged as ever, and a hard-fought game was snatched by The London in the closing seconds of extra time by two goals to one. The Junior Cup side, however, recorded a surprising victory in their competition. Having beaten St. Thomas' 1—0 in the first round, they went on to beat Middlesex 6—1, and finally St. Bart's 5—1.

The Club fielded four elevens in the first part of the season, and their records are tabulated below. T. Negus captained his second eleven through many even games, and to success in the Junior Cup, and J. Davies led the Third eleven to five victories in nine games.

The Hospital has been well represented in the U.H. XI with M. Conybeare, K. Haynes, A. Hurst, D. Loader and R. Strickland making appearances. Conybeare, who has given several season's valuable service, is the only 1st XI player leaving this season. P. Liddiard, who has been kept out of the game by a chest complaint, has worked hard off the field as Team Secretary. D. Loader has assisted as Fix. Secretary.

Recently, in the Inter-Hospitals' Six-a-Side Tournament, Guy's lost by one goal to nil in the Final to U.C.H.

Reports and Results

RUGBY

Guy's v. Esher

At H.O.P. 23rd March, 1963

Won 17—10

Conditions at Honor Oak Park were ideal for the Hospital's last game of the season against Esher.

The visitors have been having another good season. Their side included a number of players who have recently had County honours.

The Hospital fielded their strongest side, their only changes being positional. Biggs reverted to his old and perhaps best position on the wing, Hollingsworth was at outside-half, being partnered by Boyd.

The sun was shining when the Hospital kicked off, playing with their backs towards the Club House. Most of the play in the early part of the first-half was fast and exciting, despite the strong wind. The Hospital side seemed much more lively than in recent matches. They appeared more confident too, as if they sensed they had the measure of their opponents.

The pack was in a rampant mood, combining excellently on many occasions in heat bouts of interpassing. The speed of the Hospital and their willingness to throw the ball about completely knocked the leaner Esher side out of their stride. It was no surprise when Biggs, following up his kick ahead, scored far out. This was soon followed by a fine long-range penalty, kicked by Edgar.

Just before half-time Esher scored an opportunist try under the posts, which was converted. At the changeover the score did not really do justice to the Hospital who were much the better side.

Half-time: GUY'S 6. ESHER 5.

Early in the second-half Edgar scored a really excellent try, following fine interpassing between backs and forwards. Soon afterwards Edgar again added to the Hospital score with a fine long-range penalty.

In addition to their loose play, the line-out work and set scrummaging of the Hospital pack was the best seen at Honor Oak this season. No doubt Hockey's experience contributed to this, particularly in the front row where both Price and Fisher had good games.

Peace and Kingdom obtained more than their fair share of the ball in the line-outs and Lloyd-Edwards, Baker and Brown enjoyed their best game of the season. Lloyd-Edwards, knowing it was his last game for the Hospital, had a particularly lively game! His verbal encouragement no doubt inspiring the side considerably.

Perhaps it was fitting that the final Guy's try was scored by Baker, who is to be next years' Captain. He was up in support of the backs after another excellent round of interpassing.

In the last minute of the game Esher scored a try which was converted.

It would be wrong to single out any individual for the Hospital, but mention must be made of Myall's excellent positional play, fielding and kicking of the ball in quite a strong wind.

Team: R. W. T. Myall; D. E. Egwuatu, C. J. Wright, J. Edgar, D. A. Biggs; R. Hollingsworth, N. F. Boyd; A. Fisher, E. S. Price, J. R. Hockey; P. K. Peace, A. J. Kingdom; R. Brown, D. R. A. Lloyd-Edwards (Capt.), I. A. Baker.

April 6th.

A XV v. H.A.C., lost 3—6.

Ex B XV v. Westminster Bank, won 28—0.

1st XV Record P. 25 W. 5 D. 0 L. 20. Points for 160. Against 423.

HOCKEY

Club Records.

	P.	W.	D.	L.	F.	A.
1st XI ..	17	7	1	9	32	29
2nd XI ..	14	7	0	7	30	24
3rd XI ..	9	5	0	4	16	11
4th XI ..	5	1	0	4	4	12

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APPOINTMENTS VACANT

Evelina Children's Hospital of Guy's Hospital, Southwark Bridge Road, London.

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APPOINTMENTS

UNIVERSITY OF LONDON

Dr. G. F. Vaughan has been granted probationary recognition as a Teacher of Mental Diseases at Guy's Hospital Medical School for a period of two years.

Dr. S. J. Wyard has been appointed to the Readership in Physics, tenable at Guy's Hospital Medical School from 1st October, 1963.

Dr. J. B. Cavanagh has been appointed Reader in Neuropathology at Guy's Hospital Medical School.

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UNIVERSITY OF OXFORD

2nd B.M. Hilary Term, 1963

Special and Clinical Pathology

C. S. Good J. M. Latham

PAPERS BY GUY'S MEN

In order to make this list as complete as possible, Guy's men whose papers have not been noted in this column are asked to send the Editor details of their publications.

Clarkson, Patrick. Burns. *Brit. J. Surg.*, 1963, **50**, 457.

Davies, G. M. Fog bronchiolitis. *Lancet*, 1963, i, 580.

Davis, D. P. General practice in Zululand. *Practitioner*, 1963, **189**, 788.

Davis, H. C. Learning by looking. *Dent. Mag.*, 1963, **80**, 9

Ellis, F. G. A cystoscope retainer. *Lancet*, 1963, i, 754.

Fox, W. Ambulatory chemotherapy in a developing country: Clinical and epidemiological studies. *Adv. tuberc. Res.*, 1963, **12**, 28.

Hayton-Williams, D. S. Transplantation of lower third molar to first molar site. *Dent. Practit.*, 1963, **13**, 317.

Helliwell, P. J. Intensive therapy wards and the ten-year plan. *Proc. R. Soc. Med.*, 1963, **56**, 225.

Irvine, R. E. and another. Patterns of visiting. *Lancet*, 1963, i, 597.

Picton, D. C. A Vertical movement of cheek teeth during biting. *Arch. oral. Biol.*, 1963, **8**, 109.

Robson, J. M. and Sullivan, F. M. Production of foetal abnormalities in rabbits by Imipramine. *Lancet*, 1963, i, 638.

Ross, D. N. Surgical reconstrctuion of the aortic valve. *Lancet*, 1963, i, 571.

Sanchez-Cascos, A. and Deuchar, D. P wave in atrial septal defect. *Brit. Heart. J.*, 1963, **25**, 202

Shaher, R. M. Prognosis of transposition of the great vessels with and without atrial septal defect. *Brit. Heart. J.*, 1963, **25**, 211.

Spicer, C. C. Vital statistics and the nurse. *Nurs. Mirror*, 1963, **115**, 472.

Stoll, H., Stoll, L. J. and another. Treatment of some alimentary canal disorders with a combination of Trifluoperazine and Isopropamide iodide. *Brit. J. clin. Pract.*, 1963, **17**, 149.

Tibbs, D. Canulae for arterial surgery. *Lancet*, 1963, i, 639.

CHANGE OF ADDRESS

W. J. Appleyard, B.M., B.Ch, "Shirburn", White Lane, Ash Green, nr. Aldershot, Hants. Tel: Aldershot 22269.

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Dr. Ian Gurner, 39, Park Road, Wallington, Surrey. Tel: Wallington 9878.

Dr. D. R. Laney, Grasmere, Highcliffe Close, Lympstone, Exmouth.

Dr. C. A. G. Mackenzie, "Lambeck", Horsell Park, Woking, Surrey.

Dr. P. O'Driscoll, 11a, West Avenue, Hendon, London N.W.4.

Mr and Mrs. Ian Robin, Stowe House, 3, North End, Hampstead, N.W.3. Tel: Speedwell 3646.

Dr. Allan T. M. Roberts, 8, Harley Place, Clifton Down, Bristol. Tel: 36224.

D. Robertson-Ritchie, Esq., F.D.S., L.D.S., Market House, Market Avenue, Chichester, Tel: Chichester 2337.

S. P. Robertson, Esq., L.D.S., R.C.S., 133, Rushey Green, Catford, London, S.E.6.

BIRTHS

BUDGEN.—On 13th February, 1963, at Guildford, to Gerry (née Ryan) and Patrick Budgen, a son, Adrian Patrick Boyce.

COE.—On 19th March, 1963, to Barbara and Michael Coe, M.R.C.S., L.R.C.P., a son, (Anthony James) a Brother for Julia and Geoffrey.

DEATHS

CUSHING.—On 3rd March, 1963, in Colchester Hospital, Robert W. J. Cushing, M.A., M.B. aged 78 years.

DOUGLAS.—On March 23rd, 1963, Claude Gordon Douglas, C.M.G., M.C., D.M., F.R.S. aged 81 years.

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GUY'S HOSPITAL GAZETTE

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Editors *W. G. Reeves*
S. M. Wood

Sports Correspondent *Ian Baker*

Guy's Hospital, London

PASSIM

A month ago we introduced several changes in design in the Gazette, including perhaps most revolutionary of all, a new cover. This was done without apology or justification in Passim, but with the desire to create a magazine whose appearance would suit its function both within and outside Guy's Hospital. The cover is the culmination of the wishes of several past editors and of many months of planning and we are gratified to witness a favourable response to it. One rather pedantic criticism seemed to be simply one of change itself rather than of a specific design and we hope that the shock will soon be forgotten.

It is at such a time as this, when hallowed tradition is superceded, that comment both supporting and otherwise, will tend to be more acutely aroused, and we would like to emphasise that the editors are always keen to receive suggestions as to how the design or content of the Gazette may be improved. One such suggestion which has reached us from many directions recently is that we should print more anouncements of meetings of the many societies of Guy's men throughout Britain and abroad, and we agree that it is within the function of the Gazette to do this. Space for such notices would be limited and a short column would be restricted solely to announcing future events, and then only if details were received at least six weeks before the intended date of publication. If demand is sufficient, we will be glad to introduce this column next month.

It has become almost a ritual for the editors *pro tem* to make it known that anyone who reads the Gazette is welcome to contribute. But we still feel that there are many people who would be interested in writing but who are restrained through timidity, who under-estimate their literary ability or who are victim to a generalised apathy, the latter perhaps being of greatest significance. Guy's Hospital Gazette is the only hospital journal published fortnightly, and thus has a voracious appetite for material. We particularly welcome those who have something to say on topics of general importance to air their views in the correspondence column, and it is hoped that the amount of discussion taking place in this form will increase.

By now, all subscribers should have received a leaflet announcing that it has been found necessary to increase the annual subscription to 20s., including postage, for the 26 issues. The previous rate of 12s. 6d. had been in force for over thirty years, and allowing for postage, the net cost to subscribers was 3½d. per copy. A succession of increases in printing costs and the financial independence of the Gazette made the rise in price unavoidable. It is possible that the leaflets, machine-addressed, franked and in unmarked envelopes, were dismissed by many subscribers as brand-advertising, and thereby were overlooked. We therefore ask that any subscriber who has not received one, should write to the Manager of the Gazette, and that those who

have would help us by returning their forms at their earliest convenience.

Missing

For years, no one could be quite certain whether the hub of the Empire was Piccadilly Circus or Hyde Park, and the British Empire dwindled and disappeared before the matter was settled. While the Guy's empire shows no sign of breaking up, we should point out that the Founder's statue is no longer the hub of the hospital. Thomas Guy has for the last six months been boarded up and hidden by the Guy's House reconstruction site and now only makes a fortnightly public appearance on the cover of the Gazette. During his temporary retirement, the hospital has quickly found an alternative focal-point—Smith's bookshop.

But it is undoubtedly a second-best. For those arriving for work in the morning, no more the munificent gesture of the Founder's outstretched hand, or the exhortation on the Colonade's mosaic floor to "give rather than receive"; they must run the gauntlet of impatiently-revving cars in Great Maze Pond, side-step a contractor's lorry, walk through a shower of brick-dust and negotiate the fire-hydrant outside the bookshop before gaining the comparative peace of the Park.

Smith's Corner took on the atmosphere of Speaker's Corner last week when a militant banner was raised to recruit competitors for the annual Brighton Stroll. Any day we expect the ultimate degradation of an array of soap-boxes from which fighting speeches appeal for reformation of the students' laboratory, refrigeration of beer in the bar, the emancipation of nurses or the abolition of paper hats in theatres.

Wistfully we look forward to the re-appearance of Thomas Guy to claim the centre of attraction once again and pervade the hospital entrance with more dignity, and now that the skeleton of the new east wing rises to first-floor level, that time seems not too far away.

Copies of the index to volume LXXVI of Guy's Hospital Gazette for 1962 are now available. Subscribers may obtain copies free of charge on application to the Manager, Gazette Office.

It is with great regret that we record the death of John Dalton, a third-year student at Guy's, in a car accident on 14th April, at Pescara, in Italy. We extend our deepest sympathy to his relatives. With him was a fellow-student, Richard Pennington, who is still critically ill in hospital.

GUY'S DIARY

MAY

EXHIBITION. *Retention of Urine.*

7th	T.	1.00	Mr. SCHURR. Clinical Lecture. *The Sequelae of Head Injury.*
9th	Th.	1.00	Dr. JOSEPH. Clinical Lecture. *Body Temperature in Paediatrics.*
9th	Th.	1.00	Mr. L. WILLMORE. Dental Clinical Lecture. *Disorders of Voice, Speech and Language, illustrated by recordings.*
10th	F.	2.15	Combined Round. Dr. MACLEAN, Prof. S. SHERLOCK (Royal Free Hospital) and Dr. G. JAMES (Royal Northern Hospital)
11th	S.	10.00	Departmental Round by Mr. W. P. GREENING. Clinical Theatre.
13th	M.	1.00	Dr. FLEMINGER. Clinical Lecture. *Alcoholism.*
14th	T.	1.00	Dr. DOW. Clinical Lecture
16th	Th.	5.00	Neurosurgical Round by Mr. Murray FALCONER. Clinical Theatre.
17th	F.	1.00	Mr. LEWIS. Clinical Lecture. *Some recent Advances in Obstetrics and Gynaecology.*
17th	F.	2.15	Combined Round. Department of EXPERIMENTAL MEDICINE.
17th	F.	5.00	Fison Memorial Lecture. Dr. T. E. ALLIBONE. Physiology Theatre. *Nuclear Power*
20th	M.	1.00	Dr. McARDLE. Clinical Lecture.

Professor W. J. H. Butterfield, professor of experimental medicine, has been appointed to the newly-instituted chair of medicine at Guy's as from October 1st, 1963.

At the Annual Meeting of the International Association for Dental Research held on March 21st—24th, 1963, at Pittsburgh, Pennsylvania, Professor Martin A. Rushton, C.B.E., was elected President-Elect of the Association.

NOTICES

Annual Conference on the Pathogenesis of War

The third Annual Conference on the pathogenesis of war will take place from Friday, 19th, to Sunday, 21st July, 1963, at Selwyn College, Cambridge.

Missing Volume

Guy's Hospital Reports, Series 2, Vol. 7, 1850, is missing from the Will's Library. As this is the only one in the Hospital, it would be much appreciated if whosoever has it would return it as soon as possible.

Human Chromosomes and their Abnormalities

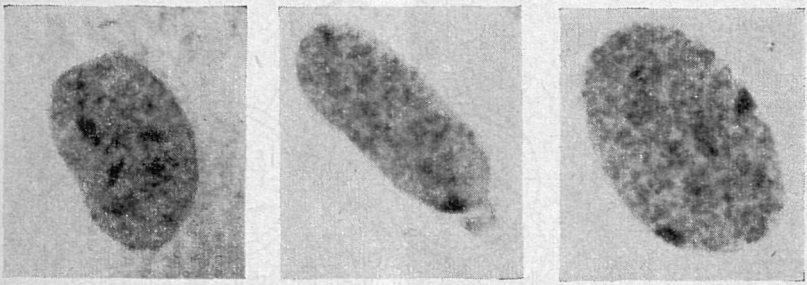
By JANET NORTHFIELD.

Paediatric Research Unit*

This paper describes the significance of nuclear sexing, followed by a brief description of mitosis and meiosis, and how errors in these divisions can give rise to abnormalities of both sex chromosomes and autosomes.

Interest in human chromosomes gained considerable impetus when, in 1956, Tjio and Levan established that the human chromosome number was 46, and not 48 as had previously been thought. As a result of the great improvement in techniques following this discovery, much work has been done on human chromosomes, and a number of abnormalities are now found to be associated with recognised clinical conditions. The study of errors of the sex chromosomes was largely stimulated by the observation made by Barr, and attention will be given to it first.

Nuclear Sexing



(a) (b) (c)

Figure 1: Nuclei, showing absence and presence of sex chromatin, (a) chromatin negative, (b) chromatin positive, (c) double mass.

While studying neurone fatigue in the cat, Barr and Bertram (1949) first noticed the presence of a deeply staining body on the nuclear membrane of the resting cells of the female, which was absent in male cells. This phenomenon was then investigated in man, when a similar sex-specific mass (sex-chromatin) was found at the nuclear membrane of the cells from oral mucosa (and many other tissues) of

**Present address*: Institute of Cardiology, 35, Wimpole Street, W.1.

normal women but not of normal men; consequently the women are described as chromatin positive, while the men are called chromatin negative. It was subsequently found that a constant relationship exists between the number of X chromosomes and the number of sex-chromatin masses, such that there is one more X chromosome present than the maximum number of masses seen in the resting nucleus (Fig. 1). This simple progression of one more X chromosome than sex-chromatin masses on the nuclear membrane is unaffected by the presence or absence of the Y chromosome.

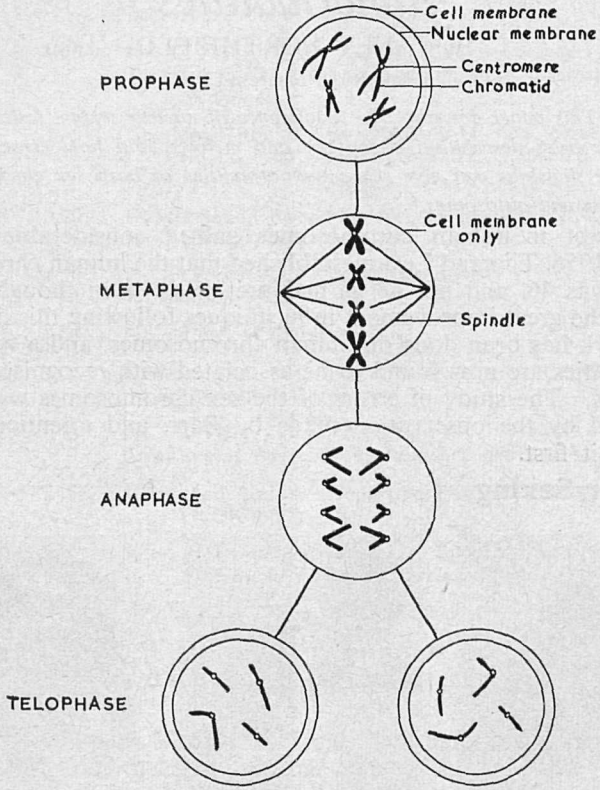


Figure 2: Mitosis, showing a cell with two pairs of chromosomes dividing.

In addition to oral smears, skin sections and vaginal smears have also been used. Blood smears may be used but are less favoured for various reasons: the "drumstick", which is a small additional lobe of specified size and morphological character seen in female polymorphs, is less frequent, and more than one drumstick in a single cell is still a rather doubtful, and certainly rare, occurrence. This test, therefore, lacks the quantitive value of the nuclear sexing as done in oral mucosa cells.

Nuclear sexing was first used as a clinical test in some endocrine disorders, such as Ovarian Dysgenesis and Testicular Feminisation in

women; and Klinefelter's syndrome in men. Studies in this field were initiated by workers at Guy's in 1954, before improved chromosome techniques made it possible to study the full chromosome complement. The technique now provides an indispensable aid to analysis by confirming the presence and number of X chromosomes in a variety of numerical and structural anomalies.

Cell Division

Two types of cell division occur in living organisms. Mitosis is the somatic cell division, by which one cell containing the diploid or somatic chromosome number (2n=46) divides to form two identical, diploid cells. This is accompanied by the replication of the chromosomes and separation of the products formed. First (prophase) the chromosomes contract, and when they become visible, it is seen that each has already divided longitudinally to form two chromatids. These are still held together by the centromere, which is visible as the primary constriction (Fig. 2). The nuclear membrane then disappears and the chromosomes become arranged on the equator of the cell (metaphase). Subsequently the centromeres divide longitudinally and the daughter chromosomes move to opposite poles of the cell (anaphase). Elongation of the chromosomes (telophase) is accompanied by the reconstitution of the nuclear membrane and division of the cytoplasm to form two cells.

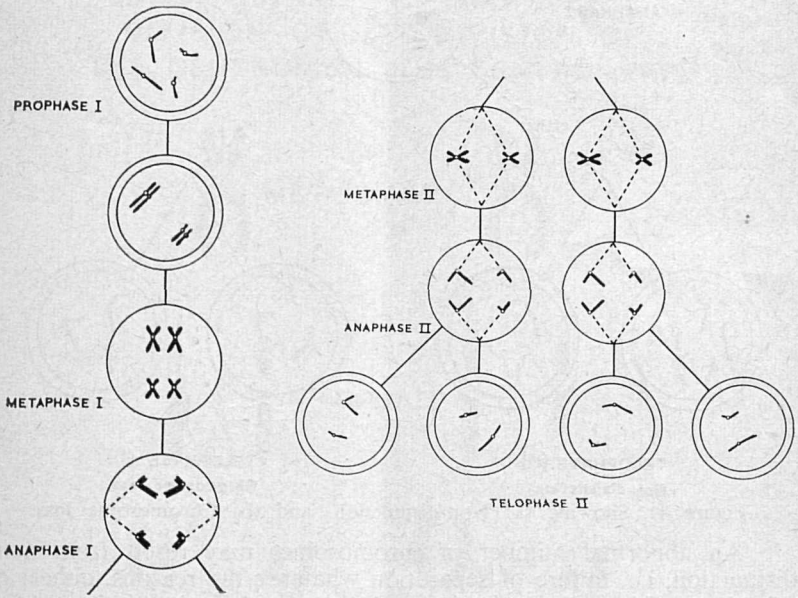


Figure 3: Meiosis, showing a cell with two pairs of chromosomes dividing to give four cells with two single chromosomes only.

Meiosis occurs in the gonads during gametogenesis. The diploid chromosome complement consists of homologous pairs of chromosomes, one of each pair having been inherited from each parent. By this division the diploid number is reduced to half, or the haploid

number, in which only one member of each homologous pair is present. This is preceded by the pairing of the homologous chromosomes and exchange of genetic material within each pair (prophase), followed by their separation during anaphase: in contrast to the mitotic separation of the chromatids the centromeres of the chromosomes, made up of two chromatids, do not divide. This first meiotic division is then followed by a second division, which is similar in pattern to a normal mitotic division, but with only half the diploid chromosome number, in which the contromere divides and the chromatids separate (Fig 3). One diploid cell thus gives rise to four haploid cells, either four sperms in the male or one ovum and the polar bodies in the female.

Origin of Chromosome Abnormalities

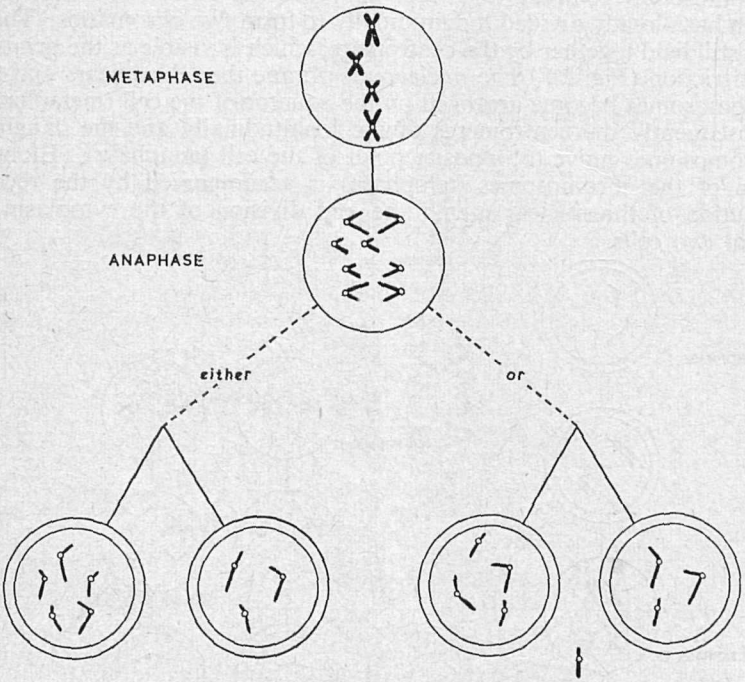


Figure 4: Showing (a) Non-disjunction, and (b) Chromosome loss.

An abnormal number of chromosomes may result from non-disjunction, i.e. failure of separation whatever the reasons, either: of two chromatids during mitosis (or during the second meiotic division of gametogenesis); or of a pair of chromosomes during the first division of meiosis. Thus both chromosomes may be included in the same daughter cell, resulting in one cell with an extra chromosome, and one with a chromosome missing (Fig 4a). Another mechanism is chromosome loss during cell division (Fig. 4b).

Occasionally chromosomes break, and rejoin to form structural rearrangements, which may be of several types. Particular importance in human cytogenetics attaches to translocations because of their presence in some examples of Down's syndrome (Mongolism), in this case often inherited. A reciprocal translocation is the exchange of sections between two chromosomes, and is shown in the diagram (Fig. 5).

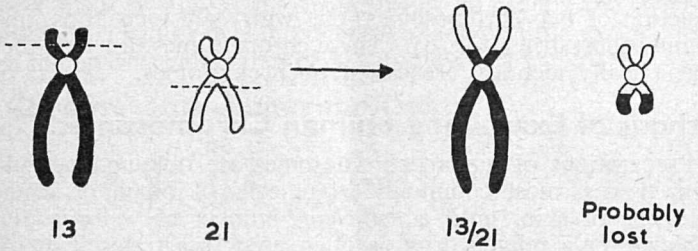


Figure 5: Reciprocal translocation between a member of the 13-15 group and a chromosome No. 21, giving a compound chromosome.

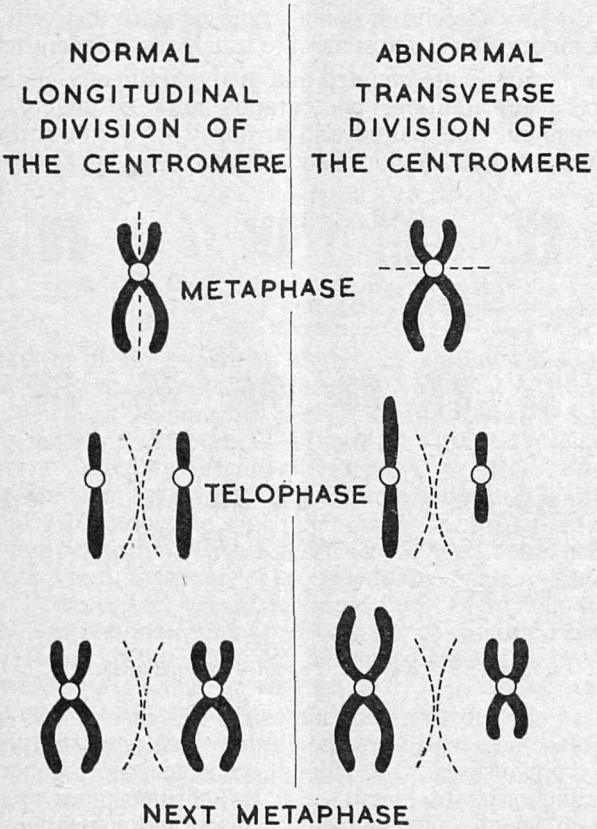


Figure 6: Formation of isochromosomes as a result of transverse division of the centromere.

Two breaks in the same chromosome may result in the inversion of the intermediate chromosome material. If the centromere is included in such an inversion it may alter the appearance of the chromosomes.

A different kind of structural abnormality arises when the centromere divides transversely instead of longitudinally. When this happens in a chromosome with unequal arms, the result may be the production of two chromosomes, one with only long arms, and one with only short arms (Fig. 6). These chromosomes in which the arms are genetically identical are called isochromosomes.

Methods of Examining Human Chromosomes

Preparations of human chromosomes are obtained by culturing certain tissues, most commonly white cells of blood or connective tissue cells of skin, until a sufficient number of cells is dividing. Colchicine, or a related drug, is often used to arrest cell division at metaphase before the centromeres divide, when the chromosomes are most easily examined. A hypotonic solution is used to swell the cells and disperse the chromosomes. Subsequently the cells are fixed, and slides made; the chromosomes are usually examined after staining.

The chromosomes are counted and analysed directly under the light microscope. In addition, photographs may be taken, and then chromosomes cut out, paired and arranged in a conventional order to make karyotypes. A normal male karyotype is shown in Fig. 7.

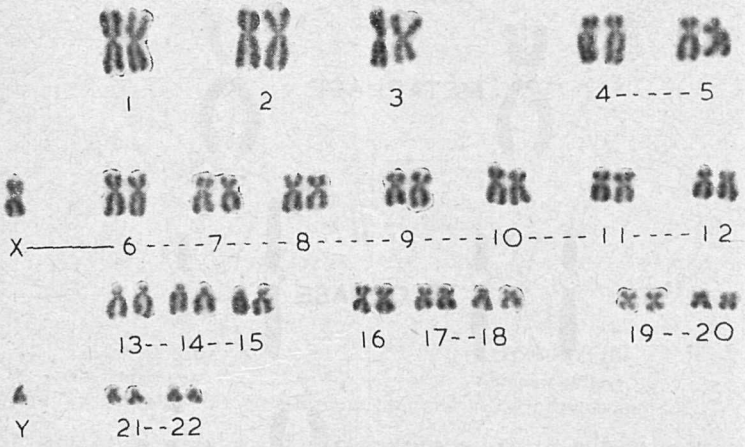


Figure 7: Karyotype from a normal male.

The two sex chromosomes are shown, in this case X and Y, and 22 pairs of autosomes, which are the chromosome pairs morphologically similar in the two sexes. The pairs of autosomes are numbered 1—22, in descending order of length. All the chromosomes are classified according to length, and centromere position (or relative length of long and short arms). The human chromosomes fall into 7 groups.

The groups 13—15 and Y—21—22 have nearly terminal centromeres and are called acrocentric. Others have nearly median centromeres and may be termed metacentric, while those with centromeres in positions intermediate between these two are described as submetacentric. Some individual chromosomes may be confidently identified (particularly the 1, 2 and 3, 16 and Y) whilst others may only be assigned with certainty to their groups. The X chromosome is very similar to some other members of its group, and it may be impossible to identify it with confidence, and nuclear sexing is often needed to confirm the number of X chromosomes present in a subject.

Sex Chromosome Abnormalities

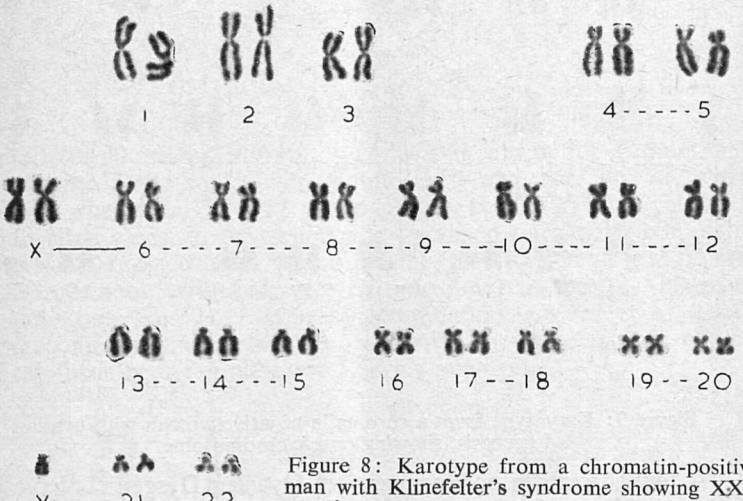


Figure 8: Karotype from a chromatin-positive man with Klinefelter's syndrome showing XXY sex chromosomes.

A number of abnormalities of the sex chromosomes have been observed. The commonest of these are XXY (total 47 chromosomes —Fig 8) which is responsible for chromatin positive Klinefelter's syndrome (Jacob's and Strong, 1959) and XO (total 45—Fig 9) which is a cause of chromatin negative Ovarian Dysgenesis (Ford, Jones, Polani, de Almeida, Briggs, 1960). This indicates that it is the presence of a normal Y chromosome which determines the formation of a testis. Patients have been found with XXXY and XXXXY sex chromosome complements, and these are also essentially male. Patients with Testicular Feminisation are of feminine body build, but have intra-abdominal (or inguinal) testes. They are chromatin negative, and have been found to have XY sex chromosomes. The presence of a "point mutational" genetic change causes in some way female development of the body in spite of the gonads.

In chromatin negative Ovarian Dysgenesis typically only one X chromosome is found as was suggested by Polani, Lessof and Bishop (1956) on the grounds of colour vision studies, which showed that the frequency of colour blindness in these patients was similar to that in normal males.

Some chromatin positive patients with Ovarian Dysgenesis have been found to have two types of cells (or cell lines) one with XO sex chromosomes and one with XX. These are called chromosome mosaics, and in this case result from chromosome loss during the divisions of the zygote or subsequent development of the embryo. Mosaic cases with Ovarian Dysgenesis have also been found with XO and XXX due to non-disjunction in a normal zygote or XO, XX and XXX cell lines. Mosaicism has also been found among males with Klinefelter's syndrome (Ford et al, 1959).

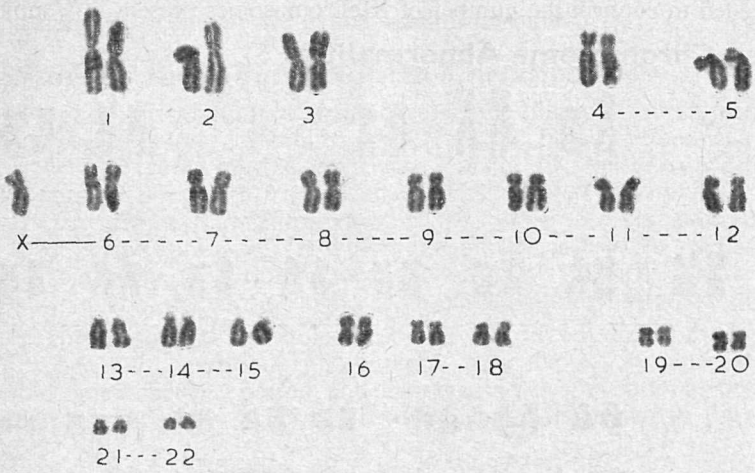


Figure 9: Karyotype from a chromatin-negative woman with ovarian dysgenesis, showing one X chromosome.

A few chromatin positive cases of Ovarian Dysgenesis have been found to have 46 chromosomes, including one normal and one isochromosome for the long arms of the X, which resembles a number 3 (Fraccaro et al, 1960). Patients have also been found with XXX sex chromosomes and 47 chromosomes (triplo X females—Jacobs et al, 1959), but no clear-cut clinical syndrome has yet been correlated with this condition, which is more commonly found among mentally defective women.

Autosomal Abnormalities

The commonest abnormality of the autosomes is trisomy of chromosome No. 21 which causes Down's syndrome. (Lejeune, Turpin and Gautier, 1959—Fig 10). It is thought that it usually results from non-disjunction during gametogenesis. The risk of the condition increases with increasing maternal age, and consequently an error during oogenesis is suspected. In a minority of cases a parent may be predisposed to produce children with Down's syndrome. This is often the result of translocation between one 21 and another acrocentric chromosome, usually of the 13-15 group. The affected child has 46 chromosomes, and apparently only two chromosomes No. 21 and only five in the group 13-15. The extra chromosome No. 21

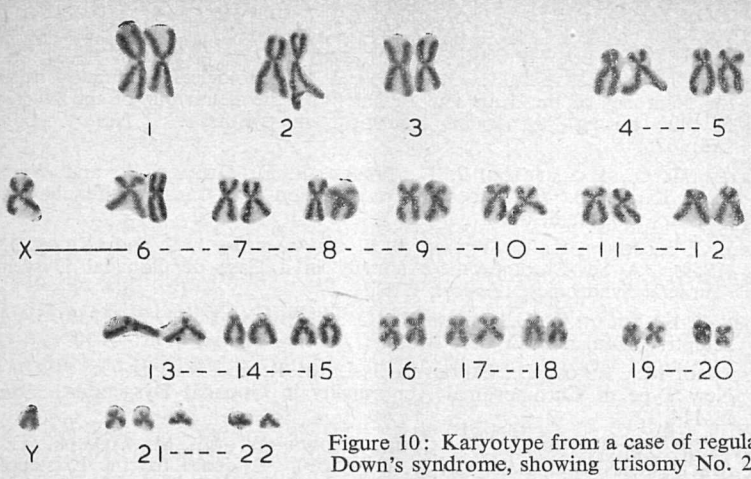


Figure 10: Karyotype from a case of regular Down's syndrome, showing trisomy No. 21.

required for Down's syndrome is concealed within the "compound" chromosome made up of one group 13-15 and one No. 21, which resembles one of the X–6–12 group (Polani et al, 1960) (Fig. 11). In the inherited cases, in the genetically balanced parent the compound chromosome replaces one 13 and one 21, resulting in a total of only 45 chromosomes, with only five chromosomes in the 13—15 group and only one No. 21. (Penrose et al, 1960; Carter et al, 1960). Chromosome mosaicism has been described in subjects with clinical features (usually incomplete) of Down's syndrome.

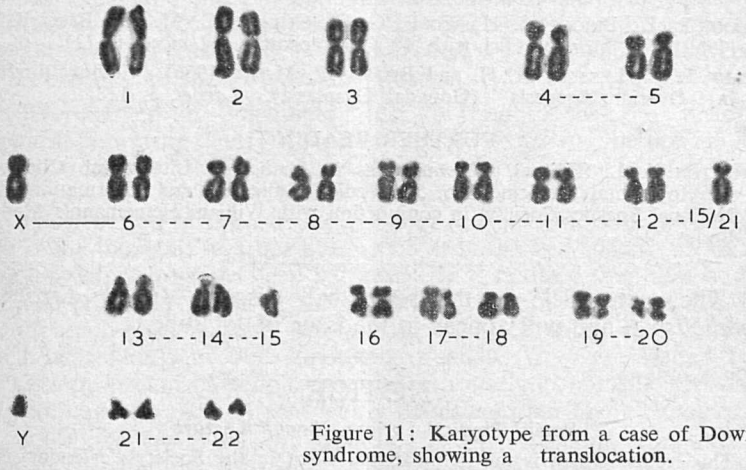


Figure 11: Karyotype from a case of Down's syndrome, showing a translocation.

Two other very rare autosomal trisomic syndromes have been described for number 17 or 18 (Edwards et al, 1960), and for one of the 13–15 group (Patau et al, 1961). Both of these are associated with multiple congenital anomalies which usually prove fatal early in life.

REFERENCES

BARR, M. L. and BERTRAM, E. G. (1949). A Morphological Distinction between the Neurones of the Male and Female, and the Behaviour of the Nucleolar Satellite during Accelerated Nucleoprotein Synthesis. *Nature (Lond.)*, 163: 676.

CARTER, C. O., HAMMERTON, J. L., POLANI, P. E., GUNALP, A. and WELLER. S. D. K. (1960). Chromosome Translocation as a Cause of Familial Mongolism. *Lancet*, ii, 678.

FORD, C. E., JONES, K. W., POLANI, P. E. DE ALMEIDA, J. C. and BRIGGS, J. H. (1959). A Sex-Chromosome Anomaly in a Case of Gonadal Dysgenesis (Turner's Syndrome). *Lancet*, i, 711.

FORD, C. E., POLANI, P. E., BRIGGS, J. H., and BISHOP, P. M. F. (1959). A Presumptive Human XXY/XX Mosaic. *Nature (Lond.)* 183: 1030.

FRACCARO, M.,, IKKOS, D., LINDSTEN, J. LUFT, R. and KAIJSER, K. (1960). A New Type of Chromosomal Abnormality in Gonadal Dysgenesis. *Lancet*, ii, 114.

JACOBS, P. A., BAIKIE, A. G., COURT BROWN, W. M., MACGREGOR, T. N., MACLEAN, N. and HARNDEN, D. G. (1959). Evidence for the Existence of the Human "Super Female". *Lancet*, ii, 423.

JACOBS, P. A. and STRONG, J. A. (1959). A Case of Human Inter-Sexuality having a Possible XXY Sex-Determining Mechanism. *Nature (Lond)*: 183, 302.

LEJEUNE, J., TURPIN, R. and GAUTJER, M. (1959). Le Mongolisme Premier Exemple d'aberation Autosomique Humaine. *Sem. Hop. Paris. Ann. Genet.* i, 41.

PATUN, K., SMITH, D. W., THERMAN, E., INHORN, S. L. and WAGNER, H. D. (1960). Multiple Congenital Anomaly Caused by an Extra Autosome. *Lancet*, ii, 790.

PENROSE, L. S., ELLIS, J. R. and DELHANTY, J. (1960). Chromosomal Translocation in Mongolism and in Normal Relatives. *Lancet*, i, 409.

POLANI, P .E., BRIGGS, J. H., FORD, C. E., CLARKE, C. M. and BERG, J. M. (1960). A Mongol Girl with 46 Chromosomes. *Lancet*, i, 721.

POLANI, P. E., LESSOF, M. H. and BISHOP, P. M. F. (1956). Colour Blindness in "Ovarian Agenesis" (Gonadal Dysplasia). *Lancet*, i, 118.

FURTHER READING.

HAMERTON, J. L. (Editor), *Chromosomes in Medicine*. Little Club Clinics in Developmental Medicine, No. 5. Medical Education and Information Unit, National Spastics Society, in conjunction with William Heinemann's Medical Books.

The next article in this series will discuss '*Inborn Errors of Metabolism*', and will appear in the issue of 1st June.

NOTICE

Pupils' Physical Society—Annual Lecture

This lecture which is the main annual event in the Society's calendar, is to be given this year by Dr. D. R. Laurence, of University College Hospital. Dr. Laurence, who is co-author of "Clinical Pharmacology", will be talking about the problems of placebos and the "Placebo Reactor"; Dr. K. Maclean will be in the Chair.

The meeting will be held in the Anatomy Lecture Theatre at 5.30 p.m. on Thursday, May 16th. All students, whether pre-or post-2nd M.B., and all other members of the hospital interested, are cordially invited.

"Polynesian Paralysis"

or "Washington to Waikiki"

by DR. W. J. TULLEY

(Based on the Presidential Address to the Dental Society.)

In the autumn of 1961 I received a visit from a Dr. James Bosma, who had recently been appointed Head of the Oral and Pharyngeal Section of the National Institutes of Health, in Bethesda, and who was particularly interested in upper respiratory and oral function in children.

Following his visit, I received an invitation to go to the Institute as a "visiting scientist" and this invitation was followed by one from the American Association of Orthodontists asking me if I would contribute to their annual meeting in Los Angeles in May, 1962. As a postscript to his letter, the President added that they were hoping to have an extension of the meeting in Hawaii and that he had put my name forward as one of the guest speakers.

All the initial arrangements went according to plan and, having received the blessing of the School Council, the Tulley family set out by Boeing 707 on 13th March, only a few days after the disaster at Idlewild.

Before proceeding to Washington we visited Dental Schools in Boston, Cleveland and Chicago, and I was able to exchange views with workers in my own research field. The pace of life at this stage may explain why my resistance was somewhat lowered and I was ready to be exposed to the Polynesian infection.

We arrived in Washington just in time to see the beautiful Japanese flowering cherry trees and the city at its best, before the heat of the summer. Dr. Bosma was a wonderful host and a most stimulating person. He insisted that my wife borrow his second car for the whole period of our stay, saying that it was a tradition in the West that if the husband was not able to be at home very much, he should give his wife a horse to keep her amused. I realised then that he had planned a pretty intensive programme. Within two days we had found an apartment, and my wife appreciated more than ever the warm-heartedness of our American friends. We were visited by a continuous stream of people laden with household utensils, bed linen, etc., to make this somewhat bleakly furnished apartment a real home.

My main task was to help Dr. Bosma orientate some of his research towards the problems of malformations of the jaws and oral function. He found it difficult to obtain orthodontic research workers in the public health service, owing to the very attractive conditions in private practice. He was also interested to see how we had tackled the problem of serial study of facial growth and functional changes of the mouth and pharynx by cine-film analysis, as Mr. E. Gwynne

Evans and I had started a similar unit at Guy's in 1949 under the aegis of the late Professor James Whillis.

Dr. Bosma's team consisted of an orthodontist, neurologist, paediatrician, speech therapist and a speech pathologist. They were studying severe abnormalities of oral and pharyngeal function to be found in children with upper motor neurone lesions. They were also particularly interested in the Pierre Robin syndrome. Despite the size of the huge clinical centre, I soon felt very much at home, and a very friendly atmosphere pervaded our section.

The time soon came round for us to fly to Los Angeles for the Orthodontic Convention. Here the scientific programme was well-attended, particularly the research sessions, and I was able to meet friends from all over the States whom I had met on my previous visit in 1956. As usual, the social programme was not neglected and we attended a number of cocktail parties in the Beverley Hills homes of the local men. My daughters were particularly thrilled as we managed, through local contacts, to get them into some of the movie studios where they met numerous film stars. At the same time, they saw something of the scientific aspect of film-making, when shown the research section, set and costume department for the film "Cleopatra", while the studio was awaiting Miss Taylor's pleasure.

Following this meeting, we set off for our charter flight to Honolulu. I was relaxed by this time and quite unperturbed by the fact that our baggage had been mislaid and was not aboard the plane when we left Los Angeles. Usually I am extremely neurotic about my baggage, particularly as it contained all my slides and films. I have since diagnosed this as the prodromal stage of Polynesian Paralysis. As we flew in over the Hawaiian Islands we passed the large island of Hawaii, and then flew on to Oahu, the most populated island, dominated by Honolulu in the shadow of the great extinct volcano, Diamond Head. At the airport we were greeted by members of the Hawaiian Orthodontic Society, their welcome being over-shadowed by the beautiful girls who greeted us in the traditional Hawaiian manner with floral leis. A little dazed from this greeting we moved over to greet the 150 delegates arriving on the second plane and were highly amused to see, behind the scenes, Hula girls changing from slacks into their hula skirts, having arrived in fast sports cars. We were driven to the Hawaiian Village Hotel and installed in a palatial penthouse suite on the 16th floor. The name belies the size of this huge building which was originally built by Henry Kaiser, who built the American Liberty ships during the war, and is now owned by the Conrad Hilton Group.

Fortunately, we were outside the real tourist season, and Waikiki Beach, which in the height of the season is hopelessly over-populated, was seen in its more natural surroundings. This beach is famous for its surfing, but this is a sport which should not be taken too lightly even when accompanied by an experienced beach-boy. I preferred to watch it at a distance.

My family immediately rushed off to buy Hawaiian mu-mu's.

In the middle of unpacking, a huge basket of the most exotic flowers arrived as a gift for my wife, and an equally large basket of fruit for myself. This was to set the pace for the wonderul hospitality we were to receive throughout our stay on the island. As this was late on the Friday afternoon, I changed into less formal attire and proceeded to relax on the beach. It was at this moment that I began to feel the first true symptoms of Polynesian Paralysis—slight muzziness in the head, hypotonicity of the limbs and the inability to rise from the prone position. I was rudely awakened at 6 o'clock to get ready for the President's cocktail party, the first of many, and one never to be forgotten for the abundance of food and drink. We were introduced to "miti", a local brew which consists of several types of rum, pineapple juice and was garnished with orchid petals. I had, reluctantly to change into a collar and tie as I was informed that the Hawaiians would look askance at an Englishman in a brightly-coloured "Aloha" shirt.

Next morning, my wife, who had not been smitten with the disease, arose early and went for a 7 a.m. swim. I managed to breakfast at 9 a.m. and we were conducted on a tour of the island. Unfortunately, the weather was not good and as we rumbled out of the town up the narrow winding roads towards the Pali, which is a mountain ending in steep cliff, we were disappointed to find the view was obscured by mist. Heavy rain falls in the mountain area every day, accounting for the lush vegetation, but fortunately does not extend to the beach. An ancient king of Hawaii was thrown over this cliff by invading kings from other islands, and there met his death with all his warriors. I had the feeling the coach was going to suffer a similar fate, but fortunately, we descended without incident and were taken to a Buddhist Temple where we listened to an amusing sermon by a Buddhist Priestess.

We proceeded to the north shore of the island, which is stony and very dangerous for swimming and surfing, and drove right along the coastline to an area inhabited by Hawaiian natives in a much more natural surrounding, far from the shops and the town of Honolulu. We drove through miles of sugar cane, one of the principal industries of Hawaii, and then back over the mountain across the plateau on which grow the famous pineapples. I had not appreciated that the islands of Hawaii supplied some 75 per cent of the world's pineapples. We returned—full of pineapple—to embark on yet another cocktail party.

Sunday morning was the start of the three-day scientific meeting. Shaking off my increasing lethargy, I managed to attend the opening Presidential Address and to present the first of the papers. The audience was dressed in motley array, a few in formal lounge suits, but others in shorts and gaily-coloured "Aloha" shirts. There was no doubting the enthusiasm of the delegates because they all turned up. The next three days were taken up with seminars, interspersed with an hour on the beach at lunch-time.

Surrounded by all the beauty of these islands, one felt that one

should make further excursions and many, in fact, roused themselves from their stupor to fly and visit the other islands, which involved a very early rise and a very late return. By this time I was in the advanced stages of the disease. Partly because of this and partly from a financial point of view, we decided not to go on this lengthy excursion, but to see as much of the island of Oahu as was possible in the time.

On the Tuesday evening we were invited to one of the traditional native feasts or "luau". We sat on the floor and ate long pig and poi and other "tasty" morsels of strange food. "Poi", which is the traditional food of the natives, is ground-up tara root mixed to a thin paste and is eaten by dipping the fingers into it. It is always described by the visitors—or "Malahini"—as tasting like wallpaper paste.

After the feast, we were given a demonstration of Hawaiian folk music and dancing. I won a garment called a "lava lava", which is a sort of male skirt or loin-cloth for participating in the festivities. I never did discover how to put it on, but it is quite useful as an apron for washing-up at home.

There are very few true Hawaiians left on the islands. Their origin is obscure but they are believed to have made the journey of some 2,000 miles from the islands of Tahiti to occupy the Hawaiian Islands which were volcanic in origin. To augment the vegetation, which was bird and sea-borne, they brought animals and plants on huge outrigger canoes.

Captain Cook was the first Englishman to discover the islands and he claimed them as a British possession in 1778. They were originally called the Sandwich Islands after the Earl of Sandwich, who was then the First Lord of the Admiralty. Since then, the islands have been in the hands of many nations. We proudly noticed that the Hawaiian flag still retains the Union Jack in the top left-hand corner, a strange oversight on the part of the Americans.

At one time Russia laid claim to them and now, of course, they are the fiftieth state of the U.S.A., having been a U.S. territory for some time prior to this. Many of the present inhabitants are of Chinese or Japanese ancestry, originally imported by the early American settlers, to work in the pineapple and sugar-cane fields. These settlers were mostly missionaries, and some Hawaiians declare bitterly that they brought Hawaii the Bible, and now the descendants of the missionaries own Hawaii, leaving only the Bible to the Hawaiians.

The missionaries came mostly from the New England States by a hazardous journey round Cape Horn. They were shocked by the nakedness of the inhabitants, and clothed the women in the "mu-mu", which resembled a Victorian nightgown. This extraordinary shapeless, multi-coloured garment is still strangely sensuous.

The Hawaiian Hula or traditional dance, has hand and body gestures each with special signficance, and is accompanied by guitar music, and many have vocal accompaniment. Children under the age

of sixteen were not allowed to learn Hula and I believe this is still enforced today. The Samoan Hula is a much more vivacious and exciting dance, accompanied by drumbeat, and is associated with a shaking and swinging action of the whole body rather than a rhythmic circular movement of the hips in the more classical form of Hula.

The last two days on the Islands I spent lounging on my back, while my daughters took endless pictures of the various stars filming for the television series, "Hawaiian Eye". One evening, we were taken for a sunset cruise and cold supper aboard one of the giant catamarans and a member of the crew found time to play a guitar and sing Hawaiian folk music. The following day, we paid a visit to Pearl Harbour and went by boat round this great natural anchorage. The Americans will never forget that "Day of Infamy" and how they were caught with their pants down. The battleship "Arizona" still remains a partly submerged, capsized wreck, and on this site they are completing a War Memorial to the thousands who died on that day.

On our last night we were taken to the revolving restaurant over the huge new supermarket. This had recently been opened and is very much a new gimmick. The sight of this typical shopping "plaza" made us realise that we were in the fiftieth state of the U.S.A. although some 2,000 miles from the mainland.

The main party of American delegates moved out by plane on Sunday morning, but we enjoyed an extra nine hours of relaxation, catching a plane which left for Washington at 11.30 that night. Even at that late hour, there were two Hawaiian girls to kiss us farewell and give us beautiful leis.

The heat in Washington was far more oppressive than in the Islands but after only six hours' sleep, I was back at work at the National Institutes of Health. My colleagues soon cured me of my Polynesian lethargy and I was launched into a series of lunch-time seminars, surviving from eight in the morning until seven at night on a hamburger and a glass of milk. During my absence, Dr. Bosma had collected a number of interesting cases. A number of these had supra-bulbar paresis as described by Worcester Drought. One girl, exhibiting minor cerebral damage, had a degree of dysphagia and dysarthria. Her feeding and speech difficulties were thought to be derived from lack of sensory appreciation of tongue position and an ingenious device was made on a dental prosthesis to provide an intra-oral electrical stimulus to guide the tongue movements. I am sure there was primary motor disturbance, and I was surprised to find that this girl had been sent to an ordinary school. She was unable to communicate in any way and had struggled with this affliction with the help of her brother who was in the same grade. I am quite sure that, with early speech therapy,, she would have been able to have made progress in the articulation of speech sounds. In fact, this was being instituted, with some success, at the late age of sixteen. Her oral movements were remarkably reminiscent of the infantile pattern, this also being found in a number of similar cases we investigated. Fluid was taken into the oro-pharynx by a suckle-like action. We also had

a number of babies with Pierre Robin syndrome. Dr. Bosma was developing new nursing techniques to prevent the indiscriminate use of tracheotomy, which imposes a very definite possibility of lower respiratory infections in these children, and makes it difficult to re-establish a normal breathing and feeding pattern.

I showed them many of our films, including cine-fluorography of swallowing actions and tongue movements in speech which we have made with the kind co-operation of Dr. Hills. I felt at the end of the two months that I had contributed a little to their work, but at the same time had gained considerable experience in the field of oral and pharyngeal development.

The time came all too soon for our flight home from Washington, via New York. The journey was smooth and uneventful. The only symptom of our Polynesian afflictions which remained was a lasting wish to return to Hawaii. This winter, and the arrival of a transfer patient from Hawaii who returns during his school holidays, has added to our nostalgia. A kind friend in Honolulu, with the help of B.O.A.C., enlivened our Dental Ball last year with seven hundred orchids, pineapples and grass skirts to produce a little Hawaiian atmosphere in a fogbound London.

NOTICES

THE RESIDENTS' BALL

We would remind all those who are interested, that the Residents' Ball will take place on Friday, 17th May, at the Hilton Hotel. All members of the Guy's Community, past or present, students or staff, are welcome on this occasion. Tickets, price four-and-a-half guineas, may be obtained on application to the President of the Residents or the Ball Secretary.

THE THIRTY CLUB

The Annual Dinner of the Thirty Club will be held on Friday, 24th May, 1963, at The Royal Air Force Club. Mr. Harry Millett in the Chair. Detailed notices have been sent to all members. Will those members who have not yet replied, please do so as soon as possible.

J. J. CONYBEARE.
W. D. DOHERTY.

COVENTRY CATHEDRAL

Anyone working at Guy's is welcome to join the Art Society's visit to Coventry to see the new Cathedral on Wednesday, 22nd May. Travel arrangements will be announced later, and fares depend on the size of the party, but should not be more than £1 return. If you are interested, please send your name immediately to Hon. Sec. of the Art Society, c/o The College.

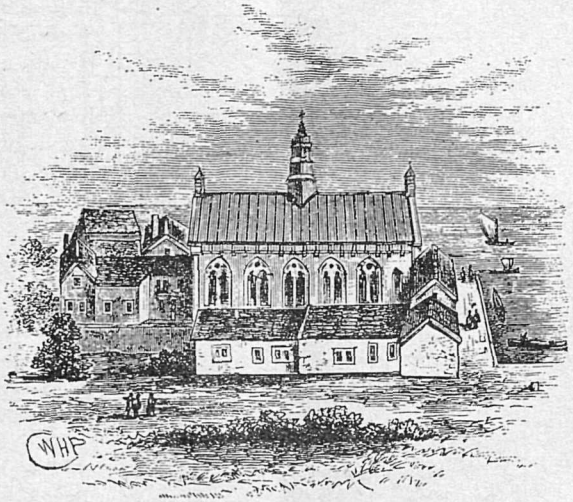
" CRITICISM " is replaced in this issue by an article on Archaeology, but the following events are being considered for the column in future:

University of London Union Art Exhibition. May 6th—11th.
London Hospitals Orchestra, with Gervase de Peyer. May 7th.
London Medical Orchestra, with Hepzibah Menuhin, conducted by Sir Adrian Boult. May 31st.

Archæology in Southwark

by JOHN CASEY

The Mediaeval Palace of the Bishops of Winchester



THE HALL OF WINCHESTER HOUSE

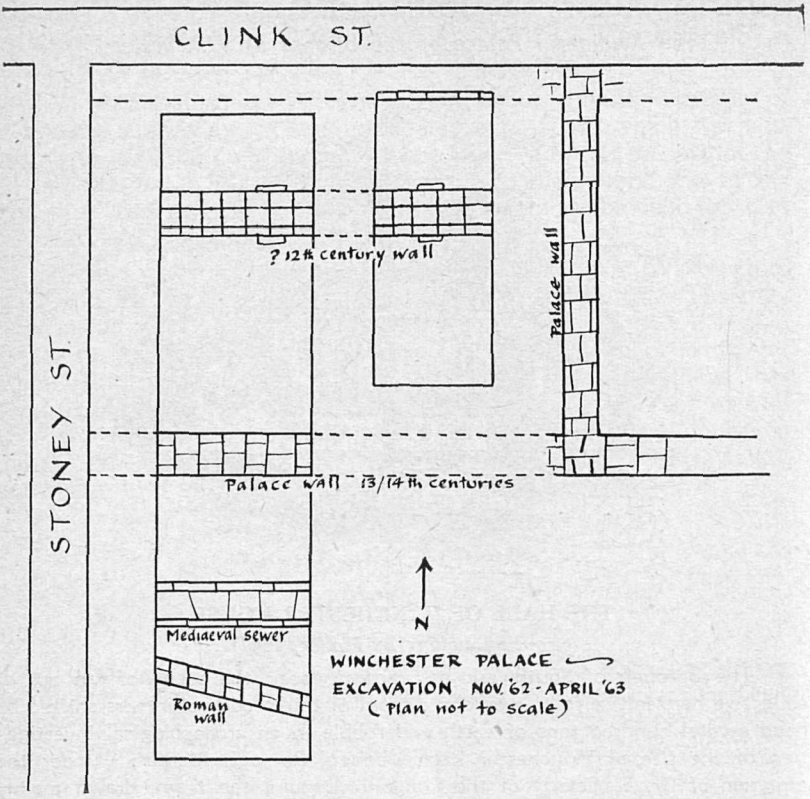
(*from an etching by Hollar,* 1647)

The Borough of Southwark has recently been the scene of an act of collective heroism, or folly, whereby a team of thirty-odd volunteers shifted by hand several hundred tons of earth and rubble in an archaeological investigation of the site of Winchester Palace behind Borough Market. Under the direction of Dr. F. Celoria of the London Museum, the team, drawn mainly from the membership of the Thames Basin Archaeological Observers' Group, have spent every week-end from the beginning of November to the end of April trying to unravel the complex history of this site.

The object of the dig, which started as a "two-week" emergency operation and which eventually grew into a campaign carried on through successive climatic phases of fog, flood, blizzard and tempest in this memorable winter, was to explore the kitchen area of the mediaeval palace of the Bishops of Winchester. The palace, strategically placed for collecting the rents which the Bishops derived from the flourishing brothels of Bankside, was begun in the 12th century, although the parts that can now be seen incorporated in the warehouses of Clink Street date from the 13th and 14th centuries. After a long history of neglect, the palace was turned over to commercial use at the time of the Restoration and ignominiously ended its days as a mustard factory which burned down most spectacularly in 1814. Subsequently a warehouse was erected on the site, and it was the demolition of this that provided the opportunity for the present excavation.

At this stage it must be confessed that the dig has produced more questions than answers, and that if this account fails to draw conclusions or offer

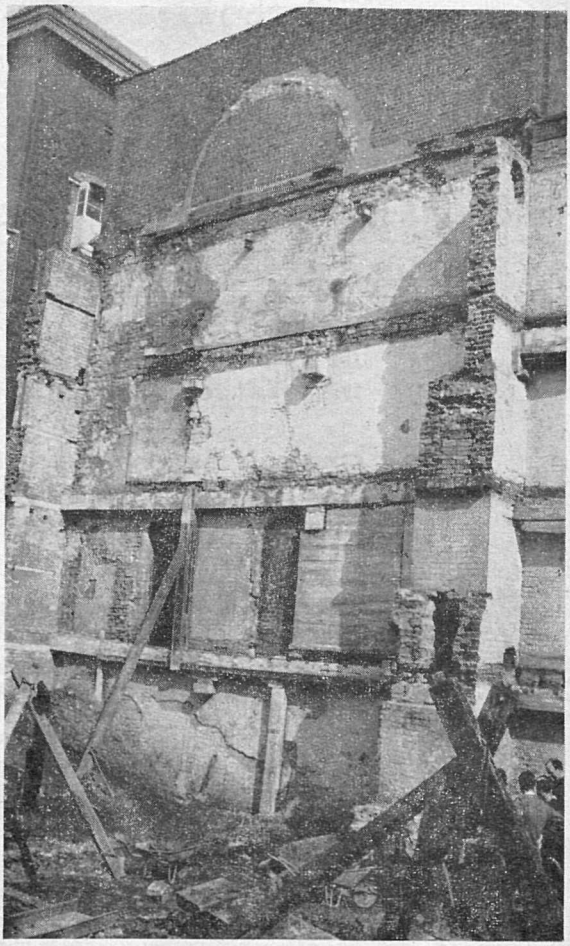
hard facts, it is because much work still needs to be done on the site. Unfortunately neither time nor money are available.



By analogy with other mediaeval buildings, it was expected that the palace kitchen would be immediately adjacent to the Great Hall, entrance to the hall being through three lancet doorways still visible from Stoney Street. The investigation of the supposed kitchen produced several surprises. Firstly there was the massive size of the walls which stand from foundations to ground surface over 14 feet high and more than six feet thick. Secondly was the absence of floors within the building. The association of "kitchen" with "floor" is as strong as it is with "sink", but here we found none. What was found, however, were very large quantities of pottery ranging back from the Tudor period and including German and French imports, vast numbers of oyster shells and food bones giving good environmental and economic evidence of life in mediaeval Southwark. The third discovery was a wall running through the kitchen area. Of finely laid masonry it is as yet undated, but may be the remains of the 12th century palace mentioned earlier. The construction of this wall is particularly interesting, the foundations being laid on huge beams morticed into the trunks of oaks. The existence of these complete tree specimens may make it possible to date the structure by dendrochronological methods.

Behind the Palace was found a sewer constructed of beautifully dressed and fitted limestone slabs, and was of such size that it was probably the main drain for the whole Palace complex and adjoining houses.

The Roman period is most richly represented on the site and finds included, besides fine quality pottery of the late 1st and mid-2nd century period, bone pins, sandals and lamps. A small part of a Roman building has been revealed with a finely plastered floor. Painted plaster, which was found in great quantities, indicate that this was a building of great richness. The paintings, mostly banded patterns and flower motifs, included two human heads. There is no doubt that there is an extensive and rich Roman building on the site since there are reports dating back to the 17th century of tesselated floors being found nearby. It could be that we have a house here dating from the first hundred years of the Roman Occupation. Unfortunately, this may never be confirmed.



West wall of the hall from Stoney Street, showing a bricked-in rose window at the top, and two of the three lancet doorways further down.

To summarise the results obtained from the excavation before the material derived from it has been systematically studied would be impossible, but we hope that we may have added a further piece to the archaeological jig-saw puzzle of London. And if in the coming months you come across a muddy, dishevelled figure leaning over a fence and rattling a box at the public, for pity's sake spare him a coin—it will be an archaeologist trying, against the odds, to understand the past before it is destroyed by the present.

Short Quiz for Investors

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CORRESPONDENCE

'A Scientific Background to Clinical Medicine'

SIR, While wishing to congratulate you on the "new look" of the Gazette, I would like also to express the hope that the promise of a series of articles on "A Scientific Background to Clinical Medicine" will not be fulfilled at the expense of the "great tradition of clinical care for the patients" referred to by Professor Butterfield, that has been built up by Guy's men over nearly two-and-a-half centuries.

I regard myself as fortunate to have served as Ward Clerk, first to the late Sir Arthur Hurst, and then to the late Professor John Ryle—both of whom taught the importance of the Art as well as the Science of Medicine. Their teaching has served me well in my work in general practice where, it should be remembered, 93 per cent of all illness is diagnosed and treated. Only one patient out of every eight seen by general practitioners in Britain reaches hospital, where only some of them will benefit from the more highly technical and scientific methods of investigation and treatment.

Certainly, medical students must learn something of the scientific background of medicine, and of course Science is important—but, let us not be blinded by it! I hope that the present-day Teachers of Medicine (whatever their own specialities) will continue to be able to find time to teach the importance of the person who is the patient, and all that this implies, in a curriculum that is so crammed full with Science.

May I also hope to see in the Gazette a series of articles on "A Humanistic Background to Clinical Medicine".

Yours, etc.,

PHILIP HOPKINS.

249, Haverstock Hill,
Hampstead, N.W.3.

The dichotomy between a "scientific" and a "humanistic" approach to medicine is illusory, for both play a very important part in the education and subsequent endeavour of a doctor. It would be more accurate to describe their rôles as complementary than antagonistic, and should the opportunity present itself we would be very pleased to complete the picture with a series of articles on the humanistic background to medicine.—EDITORS.

REVIEWS

PASSING EXAMINATIONS.

By CLIFFORD ALLEN. Macmillan. Pp. 146. *Price* 12*s.* 6*d.*

Dr. Allen dedicates this book "to all those who did not pass the first time". Amongst medical students alone, this should give him a large potential audience. He substitutes it "a psychological study of learning, remembering and examination techniques, and the causes of failure".

It would be easy to be cynical about such a book, and dismiss it unopened as another collection of "how I fooled the examiners" stories. It would also be easy to dismiss it on the grounds that the art of passing examinations is expressed in the one four-letter word—work. In fact, I believe that Dr. Allen's book could well be helpful in providing a permanent source of useful ideas concerning the simple basic requirements for study and learning. Many people will undoubtedly find that they have already consciously or unconsciously carried out some analysis of their adequate or inadequate learning habits. For those with less insight, and for those who continually fail in spite of apparently preparing assiduously for their examinations, this readable little book could be invaluable.

C. I. ROBERTS.

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A PRIMER OF PATHOLOGY.

By F. A. WARD. Butterworth. *Price* 15s.

This booklet is primarily intended for the student who finds it difficult to assimilate the Introductory Pathology Lectures. As such it is a thoroughly stimulating book providing a very simple, general picture of what Pathology is all about.

A chapter entitled " The Problems of Sir William Rubin", which is closely followed by " Reflections on the sad case of Miss Lovemore", illustrate the novel way in which much of the subject matter is presented, and throughout, the author has endeavoured to make the text as readable and interesting as possible.

It is, perhaps, a little oversimplified. Nevertheless, as a primer, many will find it extremely useful.

NORMAN J. HEALEY.

SPORT

RUGBY

The 1st XV record for the past season shows five out of twenty games won; none drawn; with 423 points conceded against 160 points scored. Seven matches were cancelled during the severe weather of January and February. These abandoned fixtures involved Old Merchant Taylors, Richmond, Cheltenham, Old Alleynians, Devonport Services, Coventry and Metropolitan Police.

Wins were recorded against Catford Bridge (23—6), Old Blues (11—3), London University (26—10), Old Cranleighians (9—6), and Esher (17—10). The three-quarters showed up well against London University and Old Cranleighians, when tries were scored by skilful, determined running. The most satisfactory victory was probably against Esher, when the side appeared at last co-ordinated and adopted an attacking approach tight and loose. Results do not always give give credit to performances, and it is fair also to mention the keen struggles against Cambridge University (3—17), when for most of the first half the Hospital led by three points, and against London Welsh, when victory was always very close and the side went down 9—11.

It is difficult, however, to review the past season and avoid recognition of the many ignominous defeats. Indifferent response in the games with Bedford (5—32), Rosslyn Park (3—28), Exeter (5—19), Bridgend (0—52) and London Irish (3—23), allowed margins of defeat out of proportion to the true ability of the fifteens concerned. Losses against other clubs were frequently permitted by elementary mistakes in the basic skills of the game, and an absence of positive retaliation. Penalties and drop goals too often were the sole components of our scores. In the Cup match defeat by St. Mary's, the fifteen made a concerted defensive effort, but took little interest in launching attacks.

The fifteen has rarely been short of suitable players and reasons for this season's impoverished record, within the limits of present fixtures, are to be found in the susceptibilities of the other basic requirements of the game. Fitness, individual thought and application, team practice and tactical appreciation have all been lacking, although, not in all cases, totally absent. Of the thirty-seven players, who have represented the First fifteen, R. Myall, at full-back, E. Price, as hooker, and P. Peace and A. Kingdom, locks, stand out for their consistently sound performances. Amongst new players, R. Kerner, on the wing, and D. Bevan, at scrum-half, have shown useful talent. D. Biggs (50) and J. Edgar (41) head the list of points' scorers, with penalty goals, conversions and tries to their credit.

Five long-playing members of the Club leave this season. E. Egwuatu, who heads the past season's try scorers, has thrilled many followers with his strong running on the wing and his effective tackling; R. Hollingsworth recovered from a serious leg injury to give many elusive performances at outside half; N. F. Boyd, a scrum-half by choice, also adapted himself to outside-half to play many useful roles with his touch and diagonal kicks. His kicking played a major

"Passing-Out"—D. R. A. Lloyd-Edwards, Captain 1961-62, 62-63.

part in our 1961 Cup success, and he also had a profitable flair for dropped goals. J. R. Hockey gave considerable experience to the front row as tight-head prop, and was also a member of the Cup-winning side. D. R. A. Lloyd-Edwards, who has captained the Club during the past two seasons, has a unique record amongst his contemporaries of not being dropped from the side for five seasons. At No. 8 and at wing-forward, he has always been a shrewd worker in attack and defence.

During the past season the Club has had a large playing membership, and before Christmas was able to field eight fifteens. The "A" XV suffered many changes through injuries, and the demands of the 1st XV, and was able to produce a winning combination on only four occasions. D. G. Gourley, the captain, tried hard to co-ordinate his many different players, and he was well supported by A. Morris, full-back, C. Lewis, hooker, and H. Cooper, wing-forward. The Ex. "A" and Wanderers' XV had successful first halves of the season. Their records appear below. Of the other fifteens, the Ex. "B", under the enthusiastic direction of E. Chater, gave renewed energy to partly-retired players, and obtained eleven victories in fourteen games. The Junior Team Secretary, M. Pearson, gave up a considerable amount of time throughout the season for the efficient organisation of these fifteens.

Other affairs of the Club have been smoothly run by Mr. G. Mitchell, Fixture Secretary; P. Peace, Assistant Secretary; and E. Tiller, who has been responsible for the publication of programmes and posters. I. A. Baker has been elected 1st XV captain for the 1963-4 season.

Sevens

This season the Hospital was host for the United Hospitals' Seven-a-Side Tournament, and appropriately the 1st VII reached the final. Their course was not easy, for in the first round, playing poor rugby, the seven beat St. George's after extra time. The standard of play improved in the second round, when Middlesex were beaten 19—0, and in the semi-final, St. Mary's II were defeated 10—5, after a hard struggle. In the final, the Hospital met St. Mary's I, who had won their earlier games in fine style. The first half was fairly even with Guy's crossing over only six points down. In the second half, however,

St. Mary's took control and exploited the tired Guy's seven with exemplary running and handling. They scored a further nineteen points to win 25—0. Egwuatu, Wright and Edgar scored several excellent tries for Guy's in the course of the tournament. The 2nd VII lost to the London II 5—3, in the opening round.

The afternoon was pleasantly and efficiently run with the help of several members of the Hospital and others. In addition, J. D. R. Nicholas, E. Chater, J. A. Thomas and D. A. Biggs carried out most of the preliminary organisation.

In the preliminary rounds of the Middlesex Sevens, played in appalling conditions at Beckenham, the First seven were knocked out by Sutton in the third round of the competition, losing 8—11. The Second seven, lost narrowly to the Old Askeans.

CRICKET

With the weather significantly dry and sunny, the 1st XI opened their season with a match against Beckenham C.C. at H.O.P. The eleven, under the captaincy of R. W. T. Myall, contained only one new player, J. Crafts, a leg-spinner, but T. J. Huins, R. Bernard and J. Norman were unavailable.

Beckenham, who elected to bat first on a green, firm wicket, found runs hard to get against the opening bowling of N. Knott and P. McAndrew. McAndrew took the first wicket and when M. Walker and J. Craft were brought on, wickets began to fall more quickly. Crafts, in particular, troubled the batsmen, and Beckenham found themselves with eight wickets down for seventy-eight runs. The last three batsmen handled the bowling more effectively, however, and took the score to 180 at the close of the innings.

H. MacGregor and T. Cheeseman opened for the Hospital, taking the score to thirty-four for the first two wickets. Myall and G. Hambleton followed, and in a good stand put on fifty-nine for the third wicket. Myall was then joined by Davoodbuoy, who kept the score going with some aggressive batting. At the close the Hospital were only fourteen runs short of victory with five wickets standing. Davoodbuoy was not out with fifty, with Myall and Hambleton scoring thirty-four and thirty-one respectively. Other details are recorded below.

The Triste Cup, which is awarded annually to the player whom, in the opinion of the 1st XI, has given the best all-round performance in a season, was last season awarded to T. J. Huins.

The Cricket Club has many attractive fixtures in and around London (fixtures for the beginning of May appear below), but has difficulty in finding umpires and scorers to assist at these matches. Would anyone willing to help with these extremely important and pleasant duties, please contact R. W. T. Myall, c/o The Dental School.

HOCKEY

The 1st XI made their annual visit to the Easter Hockey Festival at Folkestone and were undefeated in the three games played. The first game against Old Dragons was drawn two-all after the Hospital had held the lead up to the last minute of the second half. The second game was also drawn 1—1, against Radley Galleons. Steady rain spoilt the third game, but the Hospital came out on top, defeating Folkestone Optimists by one goal to nil. A fourth fixture against Jesus College, Cambridge was cancelled.

The 2nd XI, the Spirochaetes, visited Paignton Hockey Festival, winning one game, losing two and drawing a fourth.

SWIMMING

In two water-polo matches held last term, the Swimming Club lost to Lloyds by seven goals to four, and more recently beat a combined Stock Exchange —Midland Bank team by three goals to two. The defeat by Lloyds exposed a disjointed Guy's team, but the second match showed better understanding between backs and forwards. In the latter game, B. Valentine scored twice, with J. Holland adding the third goal.

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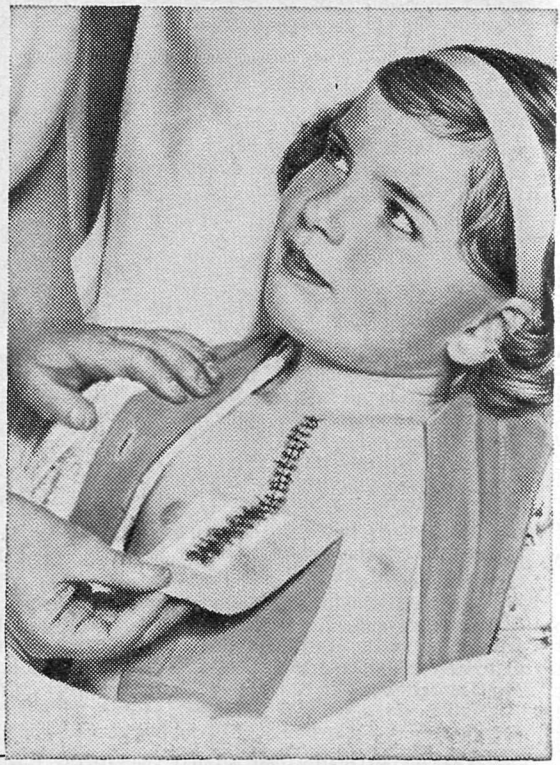

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CRICKET

1st XI v. BECKENHAM C.C.

At H.O.P. 27th April, 1963

Beckenham, 180 for 10 wkts. (J. Crafts, 6 for 70).

Guy's

H. MacGregor, ct. Hill, b. Hill	13
T. Cheesman, b. Sherren	17
R. W. T. Myall, l.b.w. Mattingly	34
G. Hambleton, b. Hill	31
M. S. Jones, ct. Underwood	4
C. Davoodbuoy, not out	50
J. Crafts, not out	15
Extras	3
Total for 5 wickets	167

N. J. Knott, P. G. McAndrew, M. Walter and P. Banks did not bat.

FIXTURES

May 1.—v. Wanderers, at H.O.P., 11.30 a.m.
,, 4.—v. Lloyd's Bank, at H.O.P., 2.30 p.m.
,, 8.—v. Stoics, at H.O.P., 2.30 p.m.
,, 11.—v. Honor Oak, at H.O.P., 2.30 p.m.
,, 12.—v. Ashtead, at Ashtead, 2.30 p.m.

2nd XI

May 4.—v. Lloyd's Bank, away, 2.30 p.m.
,, 11.—v. Honor Oak, away, 2.30 p.m.
,, 12.—v. Addiscombe, at H.O.P., 2.30 p.m.
,, 15.—v. Royal Dental Hospital, at H.O.P., 2.30 p.m.

RUGBY RECORDS

Season 1962-63

	P.	W.	D.	L.	Points F.	Points A.
A XV	18	4	2	12	134	231
Ex A	13	7	2	4	114	118
Wanderers	8	5	0	3	98	68
B XV	9	2	0	7	70	100
Ex B XV	14	11	1	2	240	78
Incogniti	6	3	0	3	75	32
C XV	4	2	0	2	46	33

WATER-POLO

v. Lloyds. At Haggerston Road Baths.
Result—Lost 7—4.
Team: R. Torrance, J. Siegle, A. Forbes, J. Peter, J. Holland, K. McGlynn, D. Bartlett, B. Valentine, D. Barnes (Capt.).

v. Stock Exchange/Midland Bank. At Haggerston Road Baths.
Result—Won 3—2
Team: K. McGlynn, J. Holland, B. Valentine, D. Barnes (Capt.), J. Peter, A. Forbes, J. Mackay.

HOSPITAL INFORMATION

APPOINTMENTS VACANT

Applications are invited for the appointment of whole time **Research Fellow** in the **Cardiac Department** of Guy's Hospital, to work primarily on the problems of heart disease, including the clinical aspects. Previous clinical experience and a higher qualification would be an advantage. Salary within the range £1,250 to £1,500 per annum, according to qualifications and experience. The appointment would be for one year in the first instance, commencing on 1st July, 1963. Applications, with the names of three referees, should be sent to the Dean, Guy's Hospital Medical School, London Bridge, S.E.1., within two weeks from the date of this advertisement.

GUY'S HOSPITAL MEDICAL SCHOOL,

Applications are invited from medical graduates for a vacant **Lectureship in the Department of Physiology.** The starting salary will be within the range £1,550 to £2,150, plus £60 London Allowance, with superannuation, and family allowance if applicable. Commencing date 1st October, 1963, or before. Application should be made not later than **31st May, 1963,** on a form obtainable from the Dean.

GUY'S HOSPITAL AND MEDICAL SCHOOL

Junior Staff Appointments, 1963-4

Applications are invited for the following appointments to the Junior Staff of Guy's Hospital, commencing on 1st October, 1963, for the session 1963-4. Forms of application are obtainable from the Superintendent and should be lodged with him not later than **21st May, 1963:—**

Anaesthetics	
Senior Registrars	3
Registrars	4
Cardiology	
Senior Registrar	1
Child Psychiatry	
Senior Registrar	1
Registrar	1
Clinical Pathology	
Registrars	4
Dermatology	
Registrars	2
E.N.T. Surgery	
Registrar	1
Endocrinology	
Registrar	1
G.U. Surgery	
Registrar	1
Haematology	
Registrar	1
Medicine	
Senior Registrar*	1
Registrars	3
Junior Registrars	3
Neurology	
Senior Registrar	1
Registrar	1
Obstetrics	
Registrar	1
Ophthalmology	
Senior Registrar	1
Registrar	1
Junior Registrar	1
Orthopaedics	
Registrar	1
Orthopaedics and Casualty	
Registrar	1
Paediatrics	
Senior Registrar	1
Registrar**	1
Physical Medicine	
Registrar***	1

Radiotherapy
Senior Registrar 1
Registrar 1
Radiology
Senior Registrars 2
Registrars 2
Trainee Registrars 2
Psychological Medicine
Registrars 3
Surgery
Registrars 3
Junior Registrar 1
Thoracic Surgery
Senior Registrars 2
Registrar 1

*Senior Registrars under the Exchange Scheme. The appointment in General Medicine marked * is made under the Exchange Scheme with the South-East Metropolitan Regional Hospital Board with a 4-year tenure of the post. Applicants will be expected to spend one year in the Regional Hospital in the Bromley Group.
**Paediatric Registrar.
This appointment will be made jointly with the South-East Metropolitan Regional Hospital Board for a 2-year period, the first being spent at Brighton (Royal Alexandra Hospital) and the second year at Guy's.
***Physical Medicine.
This appointment will be made jointly with the South-East Metropolitan Regional Hospital Board for a 2-year period, with duties partly at Guy's and partly at New Cross Hospital on a day-to-day basis.

Applications are invited for the following appointments to the Junior Staff of the *Medical School for the session 1963-64*, commencing 1st October, 1963. Forms of application are obtainable from, and should be lodged with, the Dean not later than **21st May, 1963:—**

Anatomy
Junior Lecturers (whole-time) 3
Junior Lecturer (part-time) 1
Chemical Pathology
Senior Lecturer 1
Junior Lecturer 1
Anderson Demonstrator 1
Clinical Pathology
Senior Lecturer 1
Medicine
Pre-Clinical Tutor 1
Lecturer 1
Junior Lecturers 2
Morbid Anatomy and Histology
Lecturers 2
Greville Student 1
Gull Student 1
Obstetrics
Assistant to Director (part-time) .. 1
Pharmacology
Lecturer 1
Junior Lecturer 1
Beaney Scholar in Materia Medica .. 1
Physiology
Lecturer (whole-time) 1
Junior Lecturer (whole-time) 1
Junior Lecturers (part-time) 2
Student Health Service
Assistant to Director (part-time) .. 1

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Dr. K. Wilderspin, M.B., B.S., Fir Trees, Church Road, Chavey Down, Ascot, Berks. Tel: Winkfield Row 2075.

BIRTHS

GILLON.—On 23rd April, 1963, at Guy's Hospital, *to Jean (née Stevenson) and Michael* A. Gillon, a daughter, (Mary Clare) sister for Frances.

LUND.—On 22nd March, 1963, at the Middlesex Hospital, W.1., to Patricia Mary (née Miles, S.R.N.), wife of William Spencer Lund, F.R.C.S., a son (James William Spencer)

PEEBLES.—On 9th April, 1963, at Bristol Maternity Hospital, to Jennifer and Anthony Peebles, a son (Andrew James), brother to Donald.

SCOTT.—On 6th April, 1963, at 32, Forest Drive, Theydon Bois, Essex, to Margaret (née Barrie) M.B., B.S., M.R.C.P. and Sydney Scott M.B., B.S., D.Obst., R.C.O.G., a daughter (Mary Ann), a sister for John and Jane.

VAN DEN BERG.—On 3rd April, 1963, at Farnborough Hospital, to Drina and Van, a daughter (Alison), a sister for Philip, Nicola and Katherine.

WHITEHEAD.—*On 16th April, 1963, at the* West Middlesex Hospital, to Ann (née John, M.B.B.S.) and Peter Whitehead, M.B.B.S., a daughter (Caroline Mary).

DEATHS

LEWIS.—On March 13th, 1963, Norman Ivor Lewis, L.D.S., R.C.S.Eng. age 43 of Brondeg, Bloomfield Road, Blackwood, Mon.

STEVENS.—On April 18th, 1963, at Wellington, Somerset, John Stevens, L.D.S., R.C.S.Eng.

"Cardiovascular Disease is now the leading cause of death, with coronary heart disease accounting for two-thirds of all heart disease deaths." *Ann. Int. Med.*, (1961), **55**, 33

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REFERENCES:

J. Clin. Invest., (1962), **41**, 1364
Lancet, (1962), **i**, 1321
Proceedings, IV World Cardiology Congress 1962 (In Press)
Lancet, (1963), **i**, 143
Lancet, (1962), **i**, 1323
Nature, (1962), **194**, 948

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PASSIM

Supervision

Twice already in the past six months, *Passim* has invoked its licence of *provocateur* in an attempt to stimulate discussion about the introduction of a tutorial system at Guy's. This was not provocation for its own sake, nor the quirk of a tiny minority, for a widespread feeling exists that a great opportunity in medical education is being missed. The previous two incitements were not barren, though unfortunately the reactions never reached our correspondence column, but reactions there were, ranging from senior staff to junior students, and the many interpretations of the idea of tutorials which emerged justify, we think, expansion of our earlier theme. A tutorial system aims to guide a student through a lugubrious forest of facts; clear a track so that he can see his direction and cut clearings in which he may pause, turn about, view the jungle from within and strike out in his own chosen path—a means, in fact, of seeing the wood for the trees. A tutorial system should *not* be a weekly "cramming" hour, a fevered attempt to "prepare" for examinations, any more than it should be a seminar discussion with students engaging the valuable time of teachers with abstruse irrelevances.

We can almost hear the complaints of four-fifths of our readers, who qualified under the existing system of lectures and clinical apprenticeship, that this apology for supervised learning is itself an abstruse irrelevance. Why should there be a need now for tutorial group teaching? Part of the answer is that the jungle of facts grows thicker and more complex (happily for medical progress), and as competition among students grows so the standard must be more demanding. But whatever the reason for this widespread demand for new schemes of teaching, the demand happens to exist. The British Medical Students' Association Essay Prize, recently awarded, was judged on students' essays about the medical curriculum, and a recent Conjoint medicine examination question was set on the same subject. Almost every medical school journal we have received in the past year has printed an article on the same topic, and universally the cry is for innovation.

Lest anyone should think that we advocate deserting the traditional principles of clinical teaching we must emphasise that the tutorial system would perform an ancillary function, co-ordinating, not replacing, present instruction.

We will not attempt to suggest a detailed working plan for tutorials, merely to dispel a commonplace doubt as to the practicability of such a plan, namely that the high student/staff ratio forbids it. There is at present staff and time enough for "cramming" tutorials, and the University Grants Committee in its returns for 1960/61 express optimism in a reduction in this vital factor in the near future.

Hippocampal Perversions

To some of us, bookshops have an irresistible attraction. But there are those whose interest transcends all literary boundaries. For on rare occasions one may witness a perplexing sight, as an apparently studious customer lifts up a particular volume, and places his nose between its pages as if to arrest what would otherwise have been a torrential epistaxis. Such action, however, is not intended to be a haemostatic measure, for this quiet browser will almost certainly belong to the elusive cult of the *Bücher-schnauzen*, or book sniffer. He it is who determines the merit of an encyclopaedia by sampling its nasal potentialities; to whom a book's entire literary content can be marred by one malodorous sniff. For such specialists have the osmic potential of a blood-thirsty shark, and to them even the smallest *aide-mémoire* may be capable of providing an ecstatic olfactory experience. The exact nature of a particular smell may be difficult to define, and it is only a minority who have that nasal agility which can pick up some of the rarer and more subtle effluvia.

The chief ingredient is usually emitted by the paper of the volume, the binding serving a minor rôle in the final essence. But the glue, ah yes!, that is of great significance. With the advent of a variety of synthetic concoctions, the older and more trusted fish varieties are fading into obscurity. Yet this transition has brought its own complications, for our student may well now be victim of a stranger plight, that of "glue sniffing", an addiction which has only recently been recognised.

In 1961, 134 children were arrested in Denver, Colorado, for glue sniffing, and several reports have described the prevalance of this pastime in America. Usually, however, the glues found to be of greatest satisfaction are those used as cements in building models, etc., and no cases have as yet been reported involving the inhalation of book-glue itself. The symptomatology of this condition is not unlike that of alcoholic intoxication and should you be present when a seemingly normal reader displays unusual behaviour in a bookshop we ask you to bear in mind these finer points.

Ask yourself these questions: Did he sniff it?, and, Did he like it? For you may be in the unique position of diagnosing the first case of glue-sniffing acquired from books. In addition symptoms resembling delirium tremens may be seen on withdrawal, and thus it would be unwise to deprive the victim of his book; at least not during the acute stage (although he may well have to pay for it).

However, we hope that this apparently harmless idiosyncrasy will not fall into disrepute, for it does add a certain mystique to one's appreciation of the printed word. Although it has been known for a sniffer to become so entranced with a particular volume that he could only satiate his desire by devouring the first three chapters, the remainder being salvaged by a perceptive sales assistant.

GUY'S DIARY

MAY

EXHIBITION. *Retention of Urine.*

20th	M.	1.00	Dr. McARDLE. Clinical Lecture. *Trigeminal Neuralgia.*
21st	T.	1.00	Mr. KILPATRICK. Clinical Lecture. *Prostatic Obstruction.*
24th	F.	1.00	Professor RUSHTON. Clinical Lecture. *Bony Swellings of the Jaws.*
24th	F.		Combined Round. Dr. MACLEAN and Guy's—Maudsley Neurosurgical Unit.
25th	S.	10.00	Clinico-Pathological Meeting. Clinical Theatre.
27th	M.	1.00	Dr. HELLIWELL. Clinical Lecture. *Anaesthesia—Its Development and Present Responsibilities.*
28th	T.	1.00	Dr. MOYNAHAN. Clinical Lecture.
28th	T.	1.00	Mr. RIX. Dental Clinical Lecture. *Timing of Orthodontic Treatment.*
30th	Th.	1.00	Mr. BEARD. Clinical Lecture. *Carcinoma of the Stomach.*
31st	F.	1.00	Dr. KENDALL. Clinical Theatre. *The Treatment of Sports Injuries.*
31st	F.	2.15	Combined Round. Professor BUTTERFIELD and Dr. A. H. DOUTHWAITE.

PUPIL'S PHYSICAL SOCIETY

Laidlaw and Beddard Prize Meeting, 30th April, 1963

Nine varied and stimulating papers were presented to the Pupils' Physical Society at a meeting for the award of these prizes; two clinical cases were offered for the Beddard Prize, and seven papers of pathological, medical or surgical interest were read for the Laidlaw Prize.

H. Tunstall-Pedoe presenting a case of hypertrophic pulmonary osteo-arthropathy was awarded the Beddard Prize, the paper outlined a case of bronchial carcinoma presenting only as polyarthritis, and ended with a warning that all middle-aged male smokers should be investigated to exclude this carcinoma when they present complaining of joint pains.

Two Laidlaw Prizes were awarded, in view of the excellence both of C. J. Padfield's paper on the treatment of diabetes, and of a review by J. Rogers of his original work in Cambridge on the immunology of reticulocyte globulins in the rat.

The papers were judged by Dr. Scott, Dr. Lessof and Mr. Maynard, and in summing up, Dr. Lessof congratulated all the speakers both on their material and delivery, and on the high standard which had, he said, made adjudication so hard a task.

Current Trends in Root Canal Treatment

(*being a lecture delivered on Clinical Day, March 2nd* 1963)

by A. H. R. ROWE.

Since the last war there has been a considerable increase in the interest shown in root canal treatment by dentists in this country. This trend has led to the formation of the British Endodontic Society, whose purpose is to further the study of the biological and technical problems associated with this form of dental treatment.

The literature on the subject is now very considerable and Endodontics has ceased to be one of the cinderellas of dentistry and has become a predictable and scientific method of treatment. It used to be said that non-vital teeth were foci of infection, and we have in the past been led to believe that any slight thickness of the periodontal membrane, let alone destruction of the lamina dura and the cancellous bone around the apex, is an indication for surgery, either extraction or apicectomy. It has been said that it is essential to obtain successive negative cultures prior to root filling and that unless every nook and cranny of the canal is filled, failure will result. Neglect to use rubber dam has been said to be a major cause of root canal failures. We have also been taught that a vital pulp may only be capped in very special circumstances. In this lecture I want to examine these and other problems facing us in root canal treatment and to take stock of where we stand today.

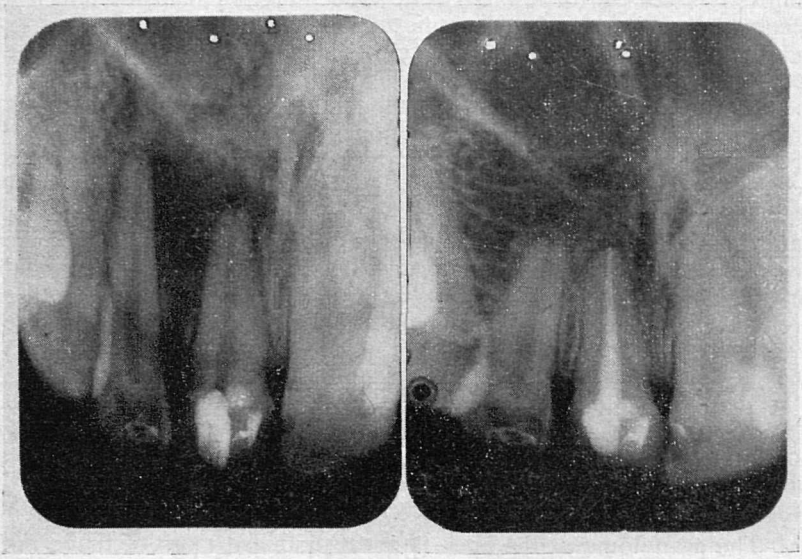
TREATMENT OF PERIAPICAL "AREAS"

Let us first of all consider periapical "areas" where either extraction or apicectomy were the methods of treatment. Unfortunately, where the "area" is small it is not possible to be sure how it will progress, but it is reasonable to treat all "areas" conservatively.

The granuloma at the apex is not an infected mass of tissue but has the elements for healing within its structure and is essentially a defence mechanism. It seems undesirable to remove this tissue since the result of such treatment is the regeneration of granulation tissue. The main indication for apicectomy was based on the assumption that the periapical lesion was infected. It has been shown by a number of authorities, including Grossman (1959), that in fact it is usually sterile. Sommer, Ostrander and Crowley (1961) have shown that only 6 per cent of periapical areas are cystic, and these cases form the main indication for apicectomy. Where a cyst is present a routine follow-up X-ray one year after root filling will show an increase in size of the periapical shadow, and then a resection may be performed. In the majority of cases it will be found that repair will take place following treatment of the infected root canal (Fig 1).

Other surgical procedures open to us include apical currettage, reverse root filling where the coronal part of the root canal is obstructed, and the artificial sinus technique. The artificial sinus acts

as a blow-off valve and prevents the formation of an acute abscess. This method has been successfully used in a number of cases where it has been impossible to sterilise the root canal prior to root filling, or where for some reason all the instrumentation of a non-vital tooth has to be done in one visit. Comparison of rates of healing following apicectomy and sinus formation show that they are similar. It is a method which may be employed in situations where an apicectomy would be impracticable. The sinus opening need not be maintained and healing occurs rapidly. Confusion sometimes arises where a sinus is already present over the apex of a non-vital tooth. No special treatment is required for the sinus as it is not normally lined with epithelium, and will usually heal rapidly once root canal treatment has been commenced.



X-rays taken on 23.3.59 *and* 29.7.61.

Figure 1. Repair of the periapical tissues occurring without surgical intervention.

It should be emphasised again that in a great many cases, periapical healing will occur without recourse to surgery. Healing occurs equally well with a variety of materials. Those we have used include zinc oxide and eugenol, Grossman's root canal sealer, Kri paste, N2 and amalgam, often in combination with gutta percha or silver points. In cases where the tooth has to be extracted for some reason not related to the root filling, histological sections show irrefutable proof of the capacity of the periapical tissue for repair. Even though a completely normal periodontal membrane may not be established, it does not necessarily indicate the presence of periapical infection. It may be that healing has occurred by the formation of fibrous scar tissue.

INSTRUMENTS

The standard and quality of root canal instruments have improved, and very elaborate kits may now be obtained. A recent outfit introduced by Zipperer contains colour coded instruments (Fig. 2), each individual size has its own colour to simplify the selection of the required instrument. Produits Dentaires produce similar sets which are said to match in size. Thus in theory it is possible to select reamers, files, paper points, G.P. points and silver points which are all of identical size. Unfortunately, these instruments are of a

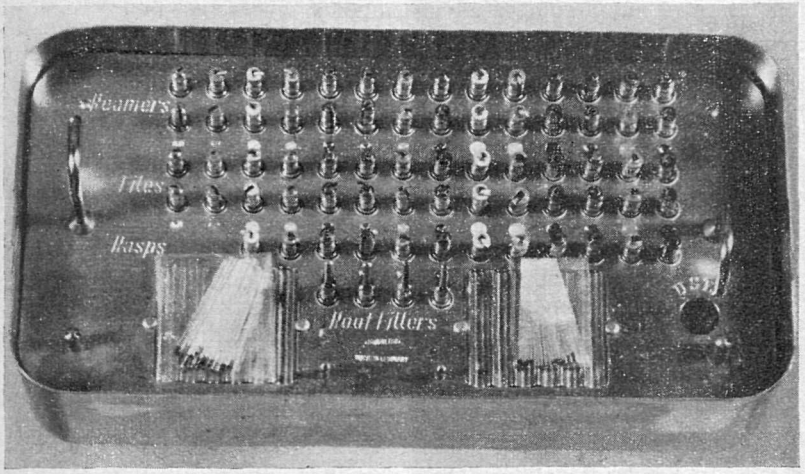


Figure 2. Zipperer outfit.

limited accuracy, and for example, it may happen that a canal prepared with a slightly small No. 4 reamer will not accommodate a slightly large No. 4 silver point. The instruments have also been criticised on the variations in taper that occur, and the fact that the increments in size between successive instruments are not standard. If the differential between two successive sizes is high, then the larger instrument will tend to bind in the root canal and make a ledge, or go off course and possibly jeopardise the result of the treatment. "Test" handles as designed by Zipperer are useful, and although they take some time to adjust, they have the advantage that the points used in the handle can be replaced cheaply. More accurate instruments are being produced by some American firms as a result of work by Ingle (1961).

CULTURES

The value of cultures in root canal treatment is discussed from time to time. Cultures are a useful method of determining whether or not a canal is ready to be filled. A report given to the Annual Congress of the American Endodontic Society in January this year showed that results obtained in a clinical trial with and without cultures were similar. It has also been shown, using phase contrast microscopical techniques, that bacteria can be demonstrated in root

canals from which negative cultures have been obtained. It is interesting to note that Sommer and Ostrander (1948) state that over 40 per cent of the root canals of non-vital teeth are sterile. Bacteriological studies are invaluable in assessing the efficacy of new drugs and materials.

RUBBER DAM

The application of rubber dam is the most effective method of isolating a tooth. Its use is to be encouraged in root canal treatment to prevent contamination of the canal, and to prevent the ingestion or inhalation of small root canal instruments.

STERILISATION

Sterilisation of instruments has received a lot of prominence lately. The Medical Research Council's report on the sterilisation, use and care of syringes has indicated that the most effective methods of sterilisation are dry heat or autoclaving. Boiling is not entirely reliable, as although the majority of bacteria are rapidly destroyed, tetanus spores may not be affected, and the fates of certain viruses, including the infective hepatitis virus, are not quite known. Various ovens for dry heat sterilisation are now coming on to the market, and dry heat is more convenient for root canal instruments than autoclaving, because the container can be sealed and the instruments are kept dry. The times recommended by Darmady in 1958 are:—

45 mins. at 160° C.
18 mins. at 170° C.
7½ mins. at 180° C.

Hot salt in the inkwell type steriliser is a convenient method for sterilising small root canal instruments. Immersion of the shaft for about 5 secs at 220—250° C. will sterilise the instrument, though in time the temper of carbon steel instruments will be affected.

NEW MATERIALS

Constant research is going on in the quest for better materials. Grossman (1960) has recently reported on the use of Kanamycin and Nifuroxine and suggests that this combination is an improvement on his earlier antibiotic paste. Ostrander (1958) reports on the remarkable efficiency of camphorated parachlorphenol—the active ingredient of Kri 3 liquid. If an antibiotic is to be used in root canals, it should ideally be one which is not required for other reasons as there is a small risk that the patient will be sensitised. Numerous other antibiotics and combinations of antibiotics have been advocated—but in the majority of cases antiseptics such as Parachlorphenol, Roccal and Dettol are effective. It should be emphasised that the mechanical preparation of the canal is much more important than the medicament inserted, and I am sure that this is one of the most important aspects of root canal treatment.

The root canal sealers such as Kerr's, Rickert's, and Grossman's are a help in accurate technique. The sealers mix to a sticky consistency and the previously fitted master G.P. or silver point can be

coated with the sealer and gently vibrated to the correct distance in the canal. Further points may be used if necessary to complete the obliteration of the canal. The dangers of overfilling are reduced to a minimum, and the accidental inclusion of the broken end of a rotary root canal filler with the filling material is avoided. Other sealers, including the epoxy resins, are being investigated.

The use of chelation in root canal treatment is an interesting development. There are numerous chelating agents available; Jenkins reviewed some of the literature on chelation in 1961. Ostby, writing in the Norwegian Dental Journal (1957), described the use of ethylene diamine tetra-acetic acid or EDTA in root canals. He suggested the addition of Cetavlon to increase the antiseptic action, and it may now be obtained under the trade name of EDTAC. This material softens the dentine walls of the canal, and helps the instruments to penetrate calcific deposits in the canal. It is self-limiting in action and non-irritant to the periapical tissues. Usually EDTAC will work within 2 or 3 minutes, but it may be sealed into a tooth if necessary. It has frequently been found that use of this material will enable instruments to get down otherwise impenetrable canals. EDTAC may be used in all root canals to facilitate reaming, and it is sometimes of value in removing broken instruments. It has the great advantage over acids in that it is not caustic, and will not destroy excessive amounts of tooth substance. This material is a most useful aid in root canal treatment.

The N2 materials were introduced into this country from Switzerland three or four years ago and have caused a great deal of controversy and argument. You may have seen that in the Journal of the American Dental Association last May the N2 method was condemned, albeit on flimsy evidence. I understand, however, that the American Dental Association now allow it to be used, and that it is being tested at the North Western University. The material was criticised by the Swiss Dental Association last year, but they have now stated that the criticism was based on the work of one person.

I have been told that the material is being used extensively all over the world, and I know that many dentists use it in this country and are getting good results. One of the main and very valid criticisms of the materials is that the formulae are kept a mystery. This is in common with a number of Continental preparations and we do not consider this to be ethically correct. One of the active ingredients of N2 is Paraform, and many would say that this is a retrograde step, because so many Paraform preparations have failed in the past.

I do not propose to describe the N2 method in detail, this has been done by Sargenti and Richter (1959), but it should be made clear that there is a great distinction drawn between the treatment of teeth with vital pulp at the apex, even though a pulpitis may be present, and those teeth which are non-vital. Teeth in the second category have to be instrumented and root filled to the apex in the conventional manner. Teeth with vital pulp tissue in the canal may be treated by a modified pulpectomy technique and root-filled in one visit. It is in

this type of case that I have found the N2 method to be very useful, particularly on posterior teeth. The removal of the pulp with large reamers as recommended in this technique will produce less trauma to the pulp stump than when the pulp is removed with a barbed broach. At present our students are taught that this is a useful aid for conserving vital exposed posterior teeth where conventional treatment would be difficult or impossible. I have been able to follow up ninety cases in practice over periods ranging from six months to three years. In that time three teeth have been extracted, only one of which was due to failure of the root filling.

The important question arising from this method concerns the fate of the remnants of pulp tissue that remain in the canal. It has been possible to obtain teeth for sectioning from two months to two years after root filling and histological examination reveals the presence of vital tissue beyond the root filling. In those cases where the N2 has been in the tooth for over six months considerable deposits of calcific tissues are observed in the apical part of the canal. Animal experiments have confirmed the tolerance of the pulp tissue to N2. In fact, in a limited series of experiments conventional root filling materials produced considerable inflammation around the apices of teeth whereas N2 did not cause any adverse reaction.

Bacteriologic tests have been done to compare the bacteriostatic activity of zinc oxide and eugenol, Kri paste, Putridomors, Grossman's sealer, AH 26 and N2. It has been found that N2 is superior in this respect to the other materials and this property may be of significance if any bacteria remain in the root canal at the time of root filling.

PULP CAPPING

Some of you will have read of the work being done on pulp capping inflamed pulps; described as the pharmaco-dynamic treatment. Triadan and Schroeder (1962) have carried out intensive work since 1960 using a combination of the synthetic corticoid called Triamcinolone with a broad spectrum antibiotic; a tetracycline, and reported excellent results. Schroeder, with an experience of over five hundred cases, found that the corticoids are eminently suitable for suppressing the inflammation of the pulp and hence providing immediate relief from symptoms. In the presence of bacteria the sole application of corticoids would lead to a quick suppuration of the pulp as the natural defence mechanisms of the body are upset by corticoids. The addition of a broad spectrum antibiotic gives the pulp a chance to survive. The application of such a preparation to cases of acute apical periodontitis has proved effective and is said to reduce the need for open drainage.

We are at present conducting a clinical trial with materials supplied to us by Lederle Laboratories. The essential ingredients are Triamcinolone and Ledermycin—their trade name for the tetracycline used. We have to date treated 86 exposures using these materials. Of these cases 25 presented with severe pulpitis and 34 with mild pulpitis. Teeth with these symptoms would not have been pulp

capped using conventional materials. Three teeth in this series have been extracted, two because of persistent pulpitis and one because the crown fractured. In one other case the pulp had to be removed. Relief from pain is usually dramatic although it may take a day or two to subside completely. The period of follow-up is short as the materials have only been available for about three months. A long-term assessment must be made of this treatment and if the results are satisfactory the number of teeth that require root treament will be drastically reduced.

In conclusion, it is apparent that the indications for surgical intervention where radiolucent areas are seen over apices of teeth are very limited. Root filling techniques will improve with the advent of new instruments and the conservation of the exposed vital pulp will be a much more satisfactory form of treatment than it has been in the past.

Acknowledgment. My thanks are due to Mr. B. A. Jones, of the Dental Photographic Department, for producing the illustrations.

REFERENCES.

1. Grossman, L. I. (1959), *J. dent Res.* 38, 101.
2. Grossman, L. I. (1960), *J. Amer. dent. Ass.*, 61, 675.
3. Ingle, J. I. (1961), *Oral Surg.*, 14, 83.
4. Jenkins, G. N. (1961), *Brit. dent. J.*, 111, 311.
5. Medical Research Council Memorandum (1962), No. 41, *The Sterilisation, Use and Care of Syringes*, London.
6. Ostby, N. (1957), *Odont. Tidskr.*, 65, 3.
7. Ostrander, F. D. and Crowley, M. C. (1948), *J. Endodontia*, Vol 3, 6.
8. Ostrander, F. D. (1958), *Transactions of the Second International Conference on Endodontics*, 64.
9. Sargenti, A. and Richter, S. L. (1959), *Rationalised Root Canal Treatment*, New York, AGSA Publications.
10. Schroeder, A. and Triadan, H. (1962), *Oral Surg.*, 15, 345.
11. Sommer, R. F., Ostrander, F. D. and Crowley, M. C. (1961), *Clinical Endodontics*, 2nd Edition, London; Saunders.

NOTICES

Paediatric Postgraduate Week-end Course—Evelina Children's Hospital

(9.30 a.m. Saturday, to noon Sunday, on 25th and 26th May, 1963).

There are one or two vacancies for the Paediatric Week-End Course which, for the eighth year running, is being held at the Evelina Children's Hospital under the auspices of the British Postgraduate Medical Federation of the University of London. The Course has been organised by the Children's Departments of the Evelina and Guy's Hospitals, and General Practitioners who qualified at Guy's will be specially welcome. Applications should be made at once to the Hospital Secretary, Evelina Children's Hospital, Southwark Bridge Road, London, S.E.1.

The British Empire Cancer Campaign Flag Day

The British Empire Campaign Flag Day is now biannual and will be held this year on May 28th. The last time it was held it was a great success at Guy's, and this was largely the result of the wonderful efforts of the nurses and other voluntary helpers.

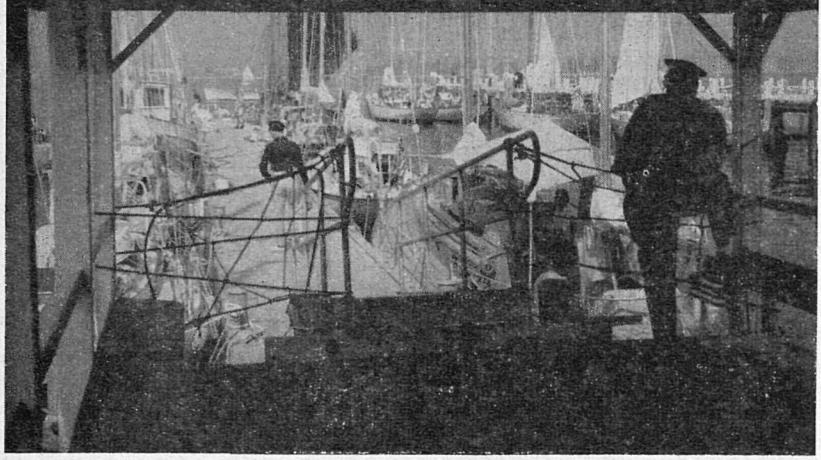
Any help from those concerned with Guy's would be much appreciated, and this of course includes the wives of Guy's men, as well as those who have helped in the past, especially the nurses.

Will those who feel that they are able to help, please notify the " Matron's Office " to the effect that they are available. ELIZABETH CLARKSON,

Hon. Treasurer, British Empire Cancer Campaign, Ladies' Committee.

Offshore Apprenticeship

JONATHAN BRADBEER writes of two ocean yacht races in which he crewed last year, whilst still a final-year Dental student.



Mud brown water of the Rio Plata, and the wreck of the Graf Spee, flying fish and whales, Brazilian girls and the Rio carnival—just some of the obstacles we encountered on the first of two trips to the American continents last year. On both occasions we went for an ocean race; the first was from Buenos Aires to Rio de Janeiro in February, and the second was from Newport R.I. to Bermuda, in June.

Until recently, Ocean Racing has been regarded as one of those sports requiring unlimited quantities of strength and stamina, not to mention money; and up to a point this is true, but in the last decade the number of boats racing offshore has risen sharply, encouraged by a wealth of modern equipment that has flooded the market and a realization that it is not as difficult as it looks. With this increase in the size of racing fleets there is a greater tendency for owners to go abroad and race in various parts of the world. There are ocean races to be found in all corners of the Globe but only a few can be regarded as "classics"; the triennial Rio race is one and the Bermuda race another.

THE RIO RACE

Filth, mixed with snow and sleet and the fetid underground railway succeeded, last year, in driving me out of London to the blazing sun of South America; to be more precise, Montevideo in the Uruguay, where the crew spent the first five days on a shakedown cruise, before the thirteen hundred mile race from Buenos Aires to Rio de Janeiro.

We moved to Buenos Aires for the last few days before the race; this meant a diagonal crossing of the hundred mile wide Rio Plata, that large nick on the eastern seaboard of South America about two thirds of the way down. It is a large estuary of mud-brown water which is very shallow; as if to serve as a reminder we passed a large number of wrecks on the way. The sandbanks that we crossed were astonishingly flat; it was possible to sail for twenty or thirty miles without recording any change in depth of water beneath our keel.

Buenos Aires harbour was a pandemonium of yachts preparing for the race, which attracts a lot of attention from the local populace. It provides them with an excuse for a large party. We had a long list of cocktail parties and dances handed to us on arrival which included invitations to two huge open-air barbecues. At these, the meat, usually lamb and beef, was roasted around charcoal fires along with exotic sausages. We washed this down with the local vino; the Argentinians were naturally very keen on this barbecue meal, served with spicy sauces, and were very good with its preparation.

Whilst we were in Buenos Aires some of us slept aboard a square-rigged ship alongside the jetty. The idea was that it was easier to walk aboard a large ship at night rather than row out to the yacht in a dinghy. This was all very nice until one night I was awakened from an inebriated stupor by a rat climbing over my legs. After that we reckoned it was worth the extra effort and risk involved, to row out to the yacht.

Racing for Rio

Entries for the race were large and from all parts of the Western world including Europe, the North and South American continents, and Africa. For the interest of the public ashore at the start and finish of the race, the most elaborate charts were set up in the Yacht Clubs, on which the course of each yacht was plotted day by day. Their

positions were fixed by observations made by three frigates and two spotter aircraft that "shadowed" the yacht during the race.

Lambs' carcasses being roasted at a barbecue near Buenos Aires.

Technically the race provides the enthusiast with a very good course; in laying out the directions for the race, one tries to give the competitors both inshore and offshore racing, preferably in tidal waters with some turning point. Wind direction cannot be relied on, but it is useless setting a race where the wind blows from one direction only.

No two yachts are alike so that an extremely complicated formula for handicap has been evolved to give entrants even chances at the start. This system, although not infallible, gives very fair racing.

Our starting line was five miles off Buenos Aires in the Rio Plata and provided the most hair-raising moments of the entire race; every Tom, Dick and Harry in his boat, either anchored or sailed up and down the line. Trying to judge one's start and to avoid anchored boats (on one occasion we didn't) was difficult even in a yacht doing only five miles an hour. Anyway, we got away and raced keenly for the following ten days, down the Rio Plata, out into the South Atlantic, and up the South American coast to Rio de Janeiro.

The weather provided us with a bit of everything, from a flat calm, for a short period, to one of the local South American "pamperos". The pampero is a local wind that sweeps off the pampas down over the sea with a great violence. It usually reaches gale force, but lasts for only 6—8 hours, and the weather clears

quickly after it. We saw either an escort ship or one of the spotter aircraft once a day and we were able to pick up a special daily weather forecast on our R/T set; transmissions were not permitted except in emergency.

In Buenos Aires the weather had been hot, but as we moved northwards it became noticeably hotter; fortunately the breeze prevented us from frying and we were all well-endowed with sunburn cream. It might be worth mentioning that two of the pharmaceutical firms in the Argentine presented each boat with a comprehensive kit of medical supplies. By now we were pretty brown; not like the thin, white-faced individuals that had arrived in Montevideo some days earlier. Apart from the flying fish, whales and dolphins, with the odd sea-bird, there was nothing to see, except the endless ocean. One rarely came across another competitor until nearer the finish on a race of this length.

The Finish and Copacabana Beach

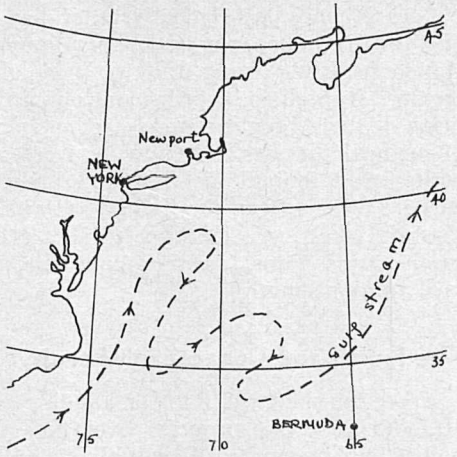
We finished off Rio de Janeiro early on the morning of the eleventh day; our progress over the last four miles to the line was picked out by powerful searchlights. From then on we were, mercifully in the hands of a member of the Yacht Club de Rio de Janeiro, who looked after us while we were staying there. As dawn broke we sailed into what must be one of the most beautiful anchorages in the world; the early morning sun falling first on the huge statue of Christ overlooking the harbour, then on the famous Sugar Loaf and finally down to the Copacabana beach, a superb stretch of sand beneath the hills, but a dead loss for bathing because of the heavy swell and strong undertow.

Then followed the last finishers and the results (we did not feature) and some more splendid parties and dances. The week that we arrived was the last week before the Mardi Gras Carnival, quite the largest and most spectacular in the world; it has lost much of its original flavour but still brings the city to a standstill for four days. The participants come to Rio in their masses from the backhills and have a disturbing habit of spraying themselves and everybody else with Ethyl Chloride for the cooling effect; many more either sniff their handkerchiefs soaked in it for the effect, or drink it.

Rio seems strangely full of unanswered questions; driving through the streets late at night one sees the lighted candles and recently-killed chicken at street junctions, a reminder that the local "black magic" or Macumba groups are still active, even among the better educated people. One had that uncertain feeling the whole time that there might be political trouble (an ex-President was expected back in the country during that week); prices rose even in the fortnight I was there, and the scene was made more dramatic as the latest news was flashed across the harbour for the city to see, on an enormous news screen. And yet the ordinary man-in-the-street still dozed unconcernedly at midday.

I flew home from Rio on the fourth and last day of the Carnival, with the main Avenida shut to traffic and filled with dancing people, dozens of makeshift bands moving slowly in and out of the throng. Our yacht was shipped north to New York for the next race in June.

THE BERMUDA RACE



This race provided contrast to the Rio race in no uncertain manner. In fact, to me it typified the difference between the peoples of the two continents. This race had quite obviously been run dozens of times before; here was serious cut-throat American racing with every rule-cheater and modern aid in the book. It was no holiday; it was serious, a job to be done and not pondered over.

I flew to New York and went by train to Newport, Rhode Island, the venue of the America's Cup races, better known perhaps, for its musical jazz festivals. In fact, it is a Naval port with little to recommend it. For yachts, the berthing facilities were good and victualling easy. There were no parties of any consequence so the crews remained fit. I nearly got nabbed by one of the American cops for illegal entry into the country and only persuaded him to drop the whole thing by leaving for Bermuda the next day. (I think he said his name was McCarthy).

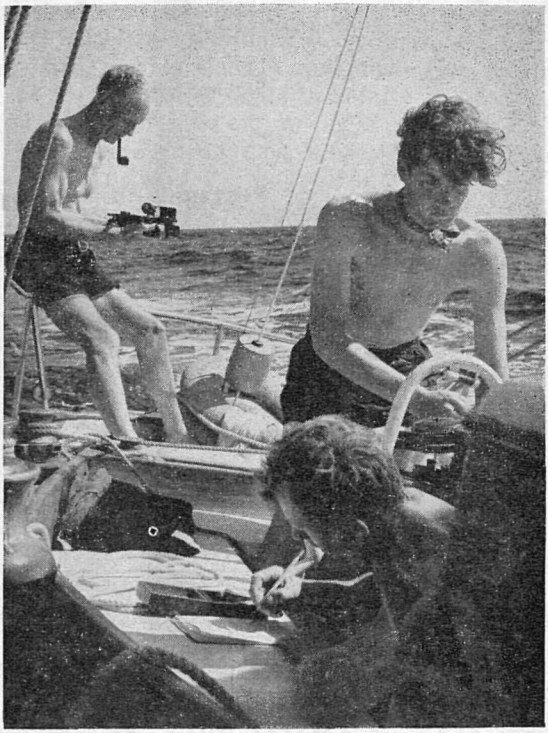
Only half the length of the Rio race, the Bermuda race attracts more than three times the number of competitors. The organisation is good, with well-planned sailing instructions and charts; weather forecasts and bulletins concerning the Gulf Stream are issued right up to the last moment with enthusiasm and efficiency.

Gulf Stream

The Gulf Stream provides the only interesting obstacle of the race. This stream of warmer water runs from the Gulf of Mexico, diagonally across the Atlantic, between Bermuda and the United States, towards the British Isles. Its rate of flow varies but can be up to 3—4 knots; in its movement there is no general course and it meanders like a lazy river on its way. The fleet must race across this stream, and, depending on which part of the meander one sails, a great many miles can be saved or added to one's daily log. The U.S. Coastguard provide an up-to-date survey of the stream before the race leaves, but since the direction of the meander changes from day to day, it is not always helpful. Instead one must calculate in which part of the stream one is travelling by measuring water temperature (it is

about 65° F. outside but 78° F. inside the stream) and taking frequent navigational sites to check one's position. With a knowledge of these two it is possible to plot one's course through the stream to advantage.

Actually the whole business is decidedly flukey and if you find yourself in the right place at the right time it is usually more by good luck than judgment.



Navigator and crew taking sights in the Gulf Stream.

The Race

With a fleet of a hundred and thirty or so boats, the start had to be split to avoid congestion. It was divided into five equal divisions and sent off at regular intervals from a line off the Brenton Reef light-vessel. I said that in the Rio race following the start we saw no other competitors until the finish. In this race, of four and a half days, we had at least one sail in sight the whole time, and, with escort ships and aircraft it was far from lonely.

The wind remained on the beam for the entire race, and never rose above moderate force. There was a period of about eighteen hours when it died altogether; we took this opportunity for a swim. One never wins a race under these monotonous conditions. The finish provided some excitement. Our first sight of Bermuda was at night; St. David's lighthouse was clear for all to see, and the nearer we came to the finish, the greater the number of competitors there were around us, until we were surrounded by them. The breeze suddenly filled in and gave us an exhilarating sail over the last four or five miles to the line.

Welcome Gifts

Hanslip Fletcher Etchings (5 views)	each	1/–
Hanslip Fletcher Etchings Framed	...	7/6
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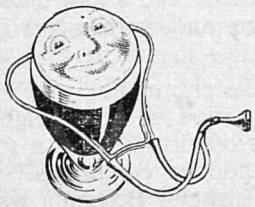
Physician's Poem

(EVEN DOCTORS ENJOY VERSIFYING ABOUT GUINNESS)



GUINNESS

is good for you

"This admirable Glow within us
Speaks of Content and also Guinness.
It soothes the Manic, spurs the
Sthenic,
Reintegrates the Schizophrenic.
A Glass will banish Halitosis
A couple, Onychogryphosis;
Whereas in Baby's feed a dash
Will heal that stubborn Nappy-rash.
Oftimes I've watched, if taken
regularly
Guinness diminish Splenomegaly.
Of Disdiadokokinesis
Its cure inspired my M.D. Thesis.
Its use has altered the Prognosis
Times without number in Phimosis,
Unarmed with Guinness, this Condition
More often baffled the Physician.
A Therapeutic Panacea
Most eager to prescribe it we are."
M.B.,Ch.B.

(published by special permission)

Bermuda—Island in the sun

We spent the first night anchored off Bermuda whilst one of the worst thunderstorms in memory battled overhead. It was certainly uncomfortable for a time. The morning dawned, however, with the most splendid sun; very hot, with a humidity of 98%, as we moved into the harbour of the principal town, Hamilton.

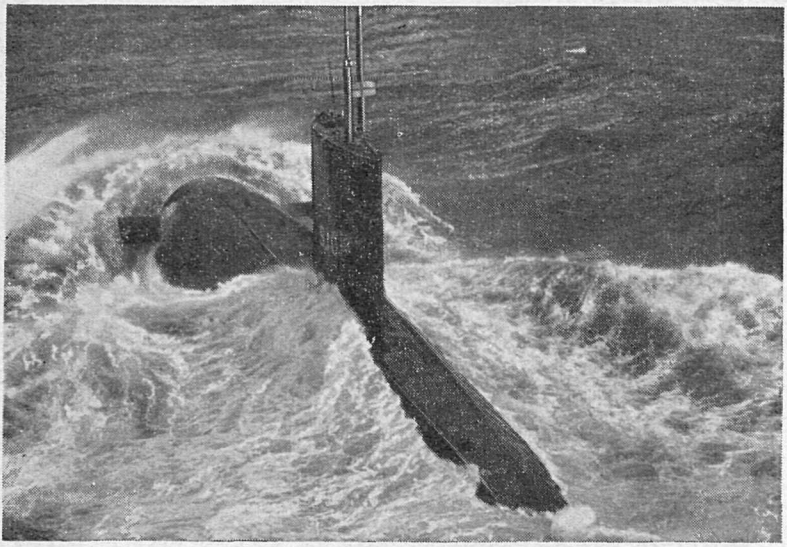
At the Yacht Club, there was an efficient system of score boards giving the precise details of the finishing times of competitors as they were received from the Line at the other end of the Island. Standing amongst the throng of competitors checking one's results was a simple matter. We finished about a third of the way down the fleet.

Bermuda has TOURIST stamped all over it; the island thrives almost entirely on American visitors. It certainly has a lot to offer, albeit at a price: golf, yachting, water ski-ing, swimming and so on. Our crew found that racing the autocycles one can hire on the Island was very good value. Parties were far less spontaneous out there; even on that holiday isle life is too serious. Any high spirits were due more to an excess of alcohol than sheer joie de vivre. Nevertheless, we were very well entertained on the Island, both by the locals and the Royal Navy. Policemen wear British-styled white helmets in directing the crush of traffic and are further protected from the midday sun by huge parasols over their heads. Traffic is as much a problem out there as anywhere else in the world, despite the fact that there are limitations on the size of vehicles and the top speed; hence the hire system they have for autocycles.

As a race it provided practically no sport at all. The course is a straight line across open sea, with the one obstacle I have mentioned, the Gulf Stream, to the finish off the Island. Certainly it is well-organised and safety precautions are good, and it finishes in a lovely spot, but I'm staggered by its popularity for such an uninteresting course.

I have been very lucky, on both occasions, to go on these trips. To take the time off for these two races may not have been easy, but it was immensely worthwhile.

The go-ahead OPPORTUNITY that is ROYAL NAVY



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As a Medical Officer, your pay, allowances, and gratuity—or permanent commission pension—are very good: for example, your initial pay is considerably higher than that of a civilian hospital registrar.

You can enter by one of three ways: as a Registered Medical Practitioner—your civilian experience back-dating seniority—or as a qualified doctor doing your pre-registration year, or as a student with a 2nd M.B. For qualified women doctors, there is a special short service commission.

For fullest details of your Royal Navy life as a Medical Officer, write, mentioning your own qualifications and age to: The Medical Director-General of the Navy, Medical Department (GO/1), The Admiralty, Empress State Building, London, S.W.6.

MO.2D

SPORT

CRICKET

The four matches played during the past fortnight have revealed a wealth of individual talent within the Cricket Club. Against Lloyd's Bank C.C., T. Huins and R. Myall established a sound position, and they were followed by two fruitful innings from G. Hambleton (41) and J. Crafts (41). The remaining batsmen failed, however, and the side were all out for 163. Against a varied bowling attack, Lloyd's also failed to score easily, and they were all out for 113. M. Walter and P. Banks each took three wickets. On the following Wednesday, the Stoics brought a very strong side to H.O.P. and defeated the Hospital by five wickets. With several ex-county players to call on, the visitors quickly had Guy's in trouble. The first six wickets fell for eighty-four runs, but then D. Silk, a new-comer, and A. Edgar came together and took the score to 136 for the seventh wicket. Silk scored a fine half-century. The Stoics started slowly and left themselves forty runs in arrears with half-an-hour's play remaining. The Hospital fielded keenly, but the winning runs came with two minutes to spare.

With the return of G. W. Cook to add further strength to the batting, the Club beat Honor Oak C.C. by 74 runs and were unlucky to only draw with Ashtead C.C. The Hospital were put into bat by Honor Oak on a moist wicket and lost the first three batsmen for only forty-four runs. Cook and Myall came together, and mastering the bowling, took the score to 112 for the fourth wicket. With a variety of strokes, both batsmen gained half-centuries. Another slump followed, but with some lusty hitting, M. Walters and N. Knott put on a further fifty at the end of the order. Honor Oak started steadily, but when the spin attack of Crafts and Cook was brought on, wickets fell quickly and the visitors were soon out for 123.

Against Ashtead, C. C. H. MacGregor and T. Huins showed their true form and scored sixty in an opening stand. G. Hambleton and J. Norman kept the score moving and the rate was maintained when G. Cook came to the wicket. Cook was in splendid form and scored all round the wicket for an undefeated 78. Myall's wicket fell prematurely and he declared with the Hospital's total at 195 for five. The wicket was a trifle slow for the opening attack and it was left to some fine bowling by A. Edgar, aided by some outstanding fielding, to start the rout. Wickets tumbled quickly, but the last man defied the close ring of fielders to carry his side through. Ashtead were then 175 for nine. J. A. Edgar finished with an analysis of eight wickets for sixty-nine.

ATHLETICS

Although the side contained only eight competitors, the Hospital earned third place amongst the thirty-two colleges competing in the University of London Championships. D. Waters took first place in the 120 and 220 hurdles, with A. Winskill following in second position. Waters, on a slightly heavy track, recorded times of 15.3 secs. and 25.5 secs. in these two events.

With a throw of 133ft. 6ins., P. Peace came second in the Discus event, and later gained the same position in the shot, putting to 43ft. 4ins. B. Hartley was the fourth member to gain points, coming third in the Javelin throwing, at 178ft. 8ins.

This was a commendable performance from a small entry. With further support, Guy's would be well placed to take the U.H. Championships.

WATER POLO

Meeting Lloyd's S.C. for the third time, the Hospital lost a closely contested match by four goals to three. In spite of this reversal, the Hospital now

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have a one goal lead in the goals' aggregate for the three matches. The team combined well and succeeded more by controlled team work than individual efforts. Scorers for the Hospital were: D. Barnes (2) and B. Valentine (1). In a relay race, which preceded the water polo, the Hospital were clear winners.

With a weaker side, the Club met the National Provincial Bank in a small pool at Northampton College. The game was reduced to a shooting contest, which the Bank side won by nine goals to four. B. Valentine scored twice with further goals added by D. Barnes and D. Bartlett.

Rugby—of coarse

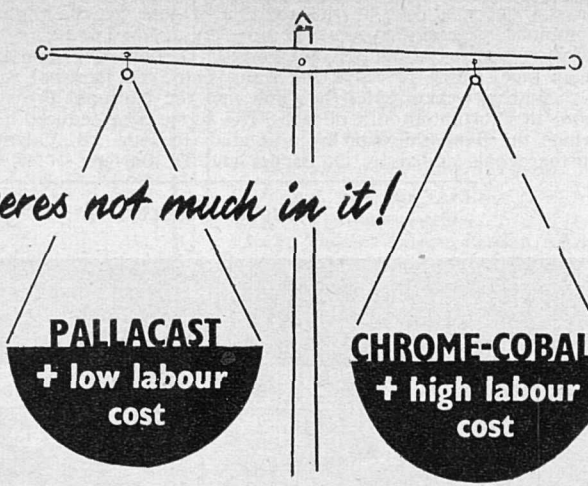
The Extra Beer XV

Purchasers of the only readable national Sunday newspaper may have noticed a series of articles on rugby-manship over the past few years. In this connection, the oldest rugby club in the world were fortunate this season in securing the services of Mr. E. J. N. R. Chater, a refugee from the aggressive sports of boxing and hockey, to lead and generally manage the affairs of an Extra Beer side. Under his unscrupulous leadership, many of the ideals and objectives of the real art of rugby were achieved, and this article is intended for the guidance of would-be exponents.

The first game of the season away was in jeopardy, when at 2 o'clock the team were still in the Miller. It was only on the departure of the captain with the pre-match kitty that the players prised themselves out of the saloon bar. The team arrived at the ground to find that the bar there didn't open before matches. Only with a maximum of tact was the host club persuaded to remedy this and a nasty crisis was averted.

Thus, what threatened to be a walk-out before the season had begun, was prevented and proved to be a memorable opening to a successful season's drinking.

A basic aim is to win with as little energy expenditure as possible. Thus, it was quickly realised that some class was needed to shore up the sagging alcohol-filled limbs. Consequently, at least five ex 1st team players and a Cambridge blue were drafted into the side at various times. The first team to meet this



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onslaught suffered a 46—0 defeat and, as a result, morale was boosted for those occasions when the bar had to be forsaken for cold fields.

However, even the best laid plans go adrift. On one occasion, we found ourselves confronted by a team with obvious fitness and ability. So with characteristic panache, the captain was soon involved in negotiations. Half-an-hour of heated discourse resulted ultimately in a 16—8 win over an Extra "C" side, composed of two 50-year-olds and thirteen schoolboys, regrettably reduced to 12 men by the end of the game. One opponent was rewarded with 14 stitches for attempting to assault our large second-row's elbow; one fractured his shoulder against our fly-half's cirrhotic liver; and one succumbed to beer fumes in the scrum. Successful fixture selection thenceforward was sustained until a so-called Hospital "social" side was met. That Hospital, having foreknowledge of our methods, confronted us with eleven of their Cup side on the largest pitch outside Twickenham. The manager of W. H. Smith, and a distinguished senior doctor had agreed to appear in anticipation of a little gentle exercise. The latter, on learning that he had to play on such a vast pitch, had an immediate attack of angina. The side, beaten to their knees, could only just crawl to the bar. Such had been the strain of the harrowing afternoon, that a veil is best drawn over the evening activities.

It is the lot of such teams to play the majority of their matches away from home. This of course brings them into conflict with the referee—who are always partisan, but none more so than the leader of a Boys' Club who, brandishing a fist under the nose of our 17-stone "strong man" towering over a 15-year-old, demanded "Don't hit him, he's only little". With unusual and commendable restraint, our forward resisted further violence. It was only later that we discovered he knew the referee was a professional wrestler.

In the unhappy event of one's opponents scoring, it is vital to give the impression that they were deliberately allowed to do so. For example, after some unexpected covering, a wing forward with both eyes on his fiancée on the touch line, attempted a clearing kick and failed to connect. The ball bounced gently into the hands of an opponent, who scored under the posts. The whole team received the incident with gales of raucous laughter—and the opposition were morally beaten from that moment on.

Naturally, in the closing minutes of a game, a side leading by a slender margin, will kick the ball huge distances into touch. Thus it is vital to have an " even-time " winger, playing purely for retrieving purposes. We were indeed fortunate to possess such a player. In the last game, however, he really fulfilled his promise, beating his man on the outside, feinting and jinking past the full-back to score in the corner. We are not informing the England selectors.

Games are won and lost by impressions created. Our scrum-half wore Harlequin socks—bought at a church fete. Anglo-Welsh was the official language spoken. And the team always arrived on time—purely for drinking purposes. Smoking between scrums was advisable—though not compulsory.

It may be wondered how thirteen to seventeen people were persuaded to repeat weekly the unpleasant experiences of the previous Saturday. The answer is simple—a prepaid kitty system—and the captain is still £6 15s. 0d. in pocket. The effectiveness of this spur can be judged from the season's record—Played 14, finished before 5 p.m., 2; Defeats, none conceded; Victories—we are still re-counting them.

(This article was compiled by Michael Pearson and Eric Tiller.)

Results

WATER POLO

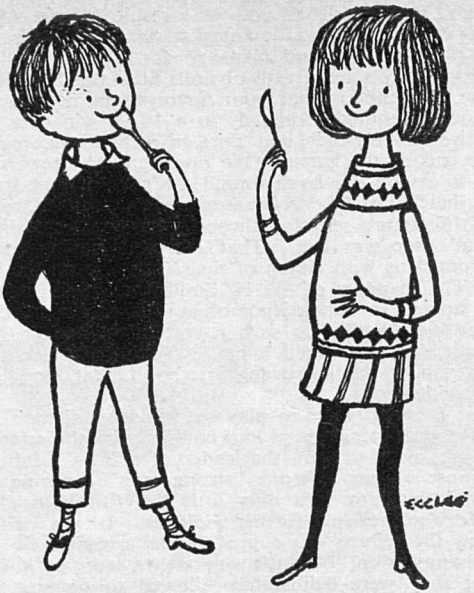
v. Lloyds S.C. At Haggerston Road Baths.
Result—lost, 4—3.
Team: J. Siegle, A. Forbes, D. Bartlett, K. McGlynn, J. Peter, J. Holland, B. Valentine, D. Barnes (Capt.).

v. National Provincial Bank S.C. At Northampton College.
Result—lost, 9—4
Team: J. Tripps, P. Malpass, D. Bartlett, B. Valentine, D. Barnes.

GOLF

v. The London Hospital.
At Blackheath 1st May, 1963
Result—won, 4½—1½.

Guy's
D. Adams, won 6/5.
D. Macay, won 5/4.
E. Baird, won 6/4.
G. Pearce, lost 2/1.
A. Bowden, won 5/3.
P. Gedge, halved.



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CRICKET

1st XI v. LLOYD'S BANK C.C.

At H.O.P. 4th May, 1963

Guy's

H. MacGregor, ct. Linely, b. Dodds	4
T. Huins, st. Chapman, b Strong	20
R. Myall, ct. Baines, b. Furlong	27
G. Hambleton, b. Furlong	41
S. Davoodbuoy, run out	0
M. Jones, b. Furlong	6
J. Crafts, ct. Birls, b. Dodds	41
A. Edgar, ct. Laudy, b Dodds	2
M. Walter, ct. Furlong, b. Dodds	6
N. Knott, ct. Thompson, b. Dodds	11
P. Banks, not out	4
Extras	1
Total	163

Lloyd's Bank, 113 for 10 wkts.

1st XI v. THE STOICS

At H.O.P. 8th May, 1963

Guy's

H. MacGregor, b Smith	0
T. Huins, l.b.w. Peake	4
R. Myall, l.b.w. Peake	8
G. Hambleton, b Smith	11
J. Crafts, run out	34
M Jones, ct. Davies, b. Pullen	4
A. Edgar, ct. Davies, b. Iverson	22
D. Silk, ct. Peake, b. Iverson	54
M. Appleby, st. Rose, b. Iverson	4
M. Walter, ct. Rose, b. Smith	0
N. Knott, not out	8
Extras	23
Total	170

Stoics, 174 for 5 wkts.

1st XI v. HONOR OAK C.C.

At H.O.P. 11th May, 1963

Guy's

H. MacGregor, l.b.w. Kerner	14
T. J. Huins, ct. Hains, b. Kerner	8
R. W. T. Myall, ct. Tuhey, b. Wilkinson	50
G. Hambleton, b. Kerner	12
G. Cook, b. Wilkinson	52
D. Silk, ct. and b. Sheffield	0
J. Crafts, l.b.w. Sheffield	0
J. A. Edgar, ct. Beavan, b. Sheffield	0
M. Walter, b. Sheffield	25
N. Knott, not out	25
P. Banks, ct. Wilkinson, b. Sheffield	1
Extras	10
Total	197

Honor Oak Park, 123. (J. Crafts, 5 for 38).

1st XI v. ASHTEAD C.C.

At Ashtead 12th May, 1963

Guy's

H. MacGregor, ct. Rhodes, b. Tungate	33
T. Huins, ct. Partridge, b. Cheveley	30
G. Hambleton, b Tungate	13
J. Norman, b. Tungate	23
G. Cook, not out	78
B. Myall, ct. Greenwood, b. Tungate	0
D. Silk not out	14
M. Appleby, A. Edgar, D. Biggs, N. Knott	Did not bat
Extras	4
Total	195

Ashtead, 175 for 9 wkts. (A. Edgar, 8 for 69).

HOSPITAL INFORMATION

APPOINTMENTS VACANT

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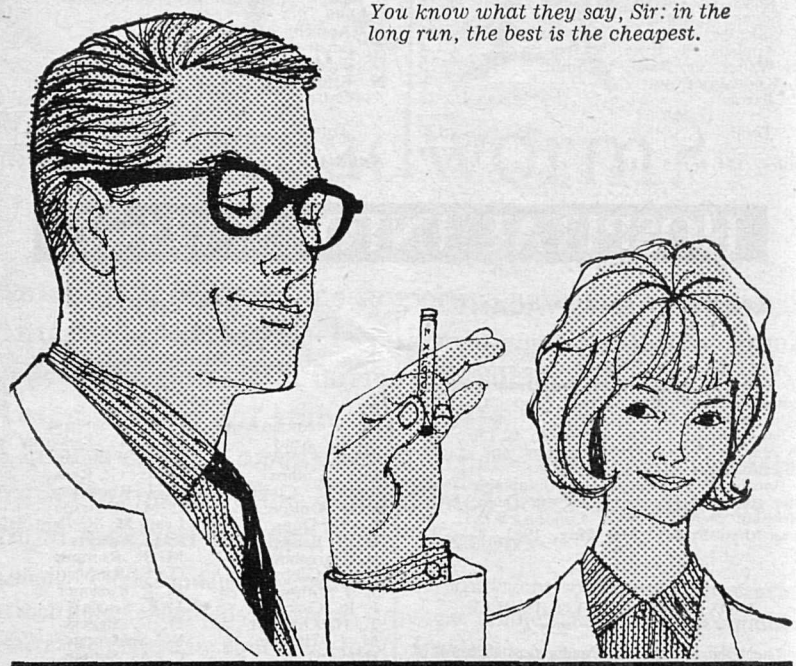

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NURSING NEWS

Entered

Sister J. Potter	to York Clinic
Sister B. Smith	to Victoria
Sister N. Younger	to *Diplock*
Staff Nurse B. Hazeldene	to Casualty
Staff Nurse S. Mortley	to Casualty
Staff Nurse M. Ryan	to Casualty
Staff Nurse Ujevic	to Theatres

Left

Sister M. Allen	from Samaritan
Charge Nurse J. Z. Cole	from Night Duty
Staff Nurse P. Roberts	from Casualty

PAPERS BY GUY'S MEN

In order to make this list as complete as possible, Guy's men whose papers have not been noted in this column are asked to send the Editor details of their publications.

Barford, L. J. and another. Unusual form of Stokes-Adams attacks with jaundice. *Brit. J. clin. Pract.*, 1963, **17**, 211.

Benson, P. F., Vulliamy, D. G. and Taubman, J. O. Congenital hemihypertrophy and malignancy. *Lancet*, 1963, i, 468.

Burn, J. H. and another. Action of substances which block sympathetic postganglionic nervous transmission. *Brit. J. Pharmacol.*, 1963, **20**, 378.

Falconer, Murray A. and another. Follow-up study of surgery in temporal lobe epilepsy. *J. Neurol., Neurosurg. Psychiat.*, 1963, **26**, 154.

Ibrahim, M. Z. M. and Adams, C. W. M. Relationship between enzyme activity and neuroglia in plaques of multiple sclerosis. *J. Neurol., Neurosurg., Psychiat.*, 1963, **26**, 101.

Kellaway, T. D. and another. Preservation of living cells by freezing and by drying. *Fed. Proc.*, 1963, **22**, 90.

Kellaway, T. D. and another. Cutaneous calculi; subepidermal calcified nodules. *Brit. J. Dermatol.*, 1963, **75**, 1.

Kennedy, G. C. and another. Effect of hydrochlorothiazide on the kidney of the electrolyte deficient rat. *Quart. J. exp. Physiol.*, 1963, **48**, 186.

Wheatley, A. J. L. Treatment of maxillo-facial injuries with minimal facilities. *Brit. dent. J.*, 1963, **114**, 307.

PERSONAL

Special rates for Guy's Staff, Students, Nurses and Subscribers to the Gazette. 5 words 10s. 6d. 15 words 21s. 0d. Box Numbers 1s. extra.

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Mr. John Wallace, 57a, Wimpole Street, London, W.1.

BIRTHS

BLAIKLEY.—On April 25th, at Nuffield House, Guy's Hospital, to Dawn (née Townsend) S.R.N., and Bruce Blaikley, M.A., a son, David John, brother for Andrew.

ROSTEN.—On April 21st, at Chiswick Maternity Hospital, to Greta (née Smith) M.B., B.S., and Deryke Rosten, L.R.C.P., M.R.C.S., a son, Martin.

STEBBING.—On March 21st, at Guy's Hospital, to Peter and Doreen Stebbing, a son, John, a brother for Anne and Jane.

WESTBURY.—On April 13th, at the Holy Cross Hospital, Calgary, to Clare and Robert Westbury, a son, Christopher Frederic, brother to Timothy.

MARRIAGES

On May 4th, at Reigate, Major R. C. Francis, R.A.M.C., to Mrs. Pamela Campbell, of Pidlow, nr. Reigate.

On May 1st, at Dartford, M. J. Varney-Burch, L.D.S., R.C.S., to Norma B. Stroud, eldest daughter of Mr. and Mrs. S. Stroud.

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- ***tug-o-war***
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GUY'S HOSPITAL GAZETTE

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No. 1953
fortnightly
one shilling

1st June 1963

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Editors *W. G. Reeves*
S. M. Wood

Sports Correspondent *Ian Baker*

Guy's Hospital, London

PASSIM

Guyoscope

In May of last year we published a letter from a Guy's doctor in Zululand who suggested that a short film be made of life at Guy's, particularly highlighting the many changes now taking place around the hospital. It was thought that the interest of many Guy's men throughout the world would emphasise the need for such a venture, but at this time we received few letters in support of this idea and no further action was taken. In this issue we publish a further letter from two members of the staff who are anxious to see this idea come to fruition, should there in fact be sufficient interest to warrant it.

For a project such as this to be successful it is of great importance that the demand for a film of this kind be known as accurately as possible, and we hope that all those who are interested in supporting this scheme will contact Mr. Engel, who has offered to co-ordinate it.

Five hundred copies of the *Gazette* are sent abroad each fortnight, this being almost one-tenth of our total circulation, and this gives some indication of the number of Guy's men who are practising overseas. Hence we feel that there are many to whom this opportunity would be welcome. Recently we announced the suggestion which had been made, that the *Gazette* should devote some space to news of the activities of Guy's men in the provinces and abroad. So far, we have received insufficient material to start a column of this kind, but should further contributions arrive we will be pleased to set aside some space for news and reports of this nature—a function which we feel the *Gazette* should fulfil.

For both these ventures to succeed, the interest and support of those who are not at present within the immediate circle of Guy's life is very necessary and we look forward to the production of both films and printed reports and announcements, of primary interest to those who have left Guy's. For at a time like the present, when change is more prevalent than ever before in the history of Guy's, we feel that those on the periphery will be anxious to keep in touch with the many developments that are taking place.

Note-taking

Form-filling is an increasing requirement of a health service in a welfare state, whilst letter-writing remains an old, well-practised art, though now reduced in elegance and verbosity. With these two exercises, note-taking is a common practice. The lecture, the interview, the book, all invite abstraction and record. The mind bluffs or is stimulated. But notes have been, and are, the support and substitute for the inadequate memories of master and student alike.

Whether by super-scription on a newspaper, compression onto an envelope or package, adherence to a headed page or expatiation in bound tomes, note-keeping is a daily habit and challenge. Methods and approach are varied. The zealous require space and speed of hand; the artistic introduce change of colour and script; the romantic invent new words and conjugations; the modernistic add signs and abbreviations. Mannerisms and irrelevances capture the over-indulgent, unselective scribe.

Primarily, notes record in brief, the facts. For this they do not gain from hasty writing. They require a lasting style—planned and titled, neat and accurate, carrying a meaning clearly comprehensible, not just for the present, but at a future date. A self-invented shorthand may fail the test of time. As an aid in concentration, they serve a function often welcome, though deceptively, they relax the uninterested mind. To breakdown the unyielding discourse of learned men; to add coherence to the anxious patient's recollections; to combat noise and relieve the discomfort of unpadded chairs are but a few occasions when pens are gladly put to paper. Selection and detachment controls the flow of ink—to describe the lecture and not the lecturer is the task. A plan and comments relieve examination fears, whereas précised chapters and repetition confuse one's thoughts.

For communication, because of their individual style and appearance, notes have limited value. They provide for data, enumeration and order, but fail in full description, direction and persuasion. Some forms follow an established sequence to help ordered thought. Others falter from lack of change and adaptation. The prepared patients have their own themes in their histories and expect not that the illnesses of their families will take precedence over their present complaints. Grammatically, notes are scanty and, as follows, frequently portray ambiguities and confusion.

"Notes are often necessary, but they are necessary evils", concluded Johnson, strongly. They have a limited rôle. They do not replace the essay or the letter. Selective and well-formed, they give a satisfying pride. They are not without care achieved.

Stop-press

Guy's doctors have featured in the national press recently for a diversity of reasons. One received extensive mention as the ship's doctor of a liner carrying a sick child who was later transferred to Guy's Hospital, others made national news by collecting a patient's boat from Guernsey, sailing it across to Itchenor for his use in England, while a third group has been immortalised by introducing, in the words of the *Daily Mirror*, a new "bean-stalk drug that makes pint-sized boys grow taller".

Such is the breadth of achievement engendered by our *alma mater*. We wish its scholars all success in their respective limelight.

GUY'S DIARY

JUNE

EXHIBITION. *The Knee.*

6th	Th.	1.00	Dr. HARDWICK. Clinical Lecture.
8th	S.	10.00	Departmental Round by Mr. Lees FERGUSON. Clinical Theatre.
11th	T.	1.00	Professor ATKINS. Clinical Lecture *A General Surgeon's view of the Hip Joint.*
14th	F.	1.00	Dr. MacLEAN. Clinical Lecture.
17th	M.	1.00	Sir Russell BROCK. Clinical Lecture. *Empyema.*
18th	T.	1.00	Dr. MANN. Clinical Lecture. *Typhoid Fever.*
18th	T.	1.00	Professor RUSHTON. Dental Clinical Lecture.
20th	Th.	1.00	Mr. LAWRIE. Clinical Lecture. *Gangrene.*
20th	Th.	5.00	Neurosurgical Round by Mr. Murray FALCONER. Clinical Theatre.

NOTICE

MENTAL HEALTH RESEARCH FUND

STUDENT PRIZES AND TRAVELLING FELLOWSHIP IN PSYCHIATRY

The Mental Health Research Fund awards annually to Medical Students and Doctors in their Pre-Registration Year three Monetary Prizes and a Travelling Fellowship as the result of an essay competition on a subject relating to mental health, and a subsequent interview.

Applicants gaining the top three places in the essay competition will be given prizes of £100, £50 and £25 respectively.

The Travelling Fellowship, tenable in a Psychiatric or other Department abroad for up to six months, will be awarded as the result of an interview combined with consideration of the candidate's undergraduate record. Persons interviewed will be chosen from the top ten in the essay competition. The travelling fellowship will normally be taken up at the end of the pre-registration year or, in the event of it being awarded to a medical student, may be taken up after qualification.

The subject for the essay this year is "*What objectively verified contributions to the understanding and treatment of psychiatric disorder have been made by (a) learning theory and (b) psychoanalysis*?"

The Panel of Examiners consists of two members of the Research Committee of the Mental Health Research Fund and one member of the Association of Teachers of Psychiatry in Undergraduate Medical Schools.

Essays should be sent, before 1st March, 1964, to the Secretary, Research Committee, Mental Health Research Fund, 38, Wigmore Street, London, W.1 (Tel. WELbeck 4103), from whom further details may be obtained.

A SCIENTIFIC BACKGROUND TO CLINICAL MEDICINE 4

Inborn Errors of Metabolism

by P. F. BENSON

Paediatric Research Unit

" Such minor chemical differences will be obviously far more subtle than those of form, for whereas the latter are evident to any careful observer the former will only be revealed by elaborate chemical methods . . . "

SIR ARCHIBALD GARROD (1902).

We can often recognise family-likeness between parents and their children. On the other hand there are numerous differences in colouring and appearance between unrelated human beings. Variations in biochemical systems are probably just as frequent. In many cases they are also genetically determined. For example, over a million different combinations are possible of the known blood groups. Specificity of blood groups is thought to result from differences in structure of mucopolysaccharides on the surface of red blood cells. Chemical individuality is also illustrated by the consistent rejection of skin grafts unless donor and recipient are uniovular twins or unless the immunological response of the recipient is faulty, as in agammaglobulinaemia. Rejection is believed to be due to an immunological response of the recipient to "foreign" molecules in the skin graft.

Variations in normal plasma proteins provide further illustrations of inherited differences between human beings. Conventional electrophoresis of human plasma proteins allows identification of six fractions: Albumen, α_1, α_2, β and γ globulins and fibrinogen. By starch gel electrophoresis, Smithies (1955, a, b) showed that the α_2 globulin fraction of normal subjects produced one of 3 distinct patterns known as Haptoglobin 1.1, 2.1, and 2.2 respectively; and that the β globulin fraction could be further separated into several distinct components which are genetically determined (Poulik and Smithies 1958; Harris et al. 1958).

Inheritance of Biochemical Mechanisms

Genes can be defined as functional units of chromosomes responsible for inheritance of biochemical and other characteristics. Gene variation probably depends on specific differences in structure of deoxyribonucleic acid (D.N.A.). These differences possibly consist of alteration in sequence of the four nitrogenous bases, of the D.N.A. molecule.

When mutation occurs the resultant gene tends to replicate itself rather than revert to the original form. Depending on environ-

mental conditions, some mutations are not compatible with survival, others may cause disability and some may bestow an advantage. The heading, "Inborn Errors of Metabolism" should no longer be restricted to rare and esoteric conditions: since it is often a matter of opinion as to what constitutes an "error", an alternative title might be "Inherited biochemical variations".

Abnormal Proteins

Of great interest has been the discovery that inherited faults in protein synthesis may lead not only to deficiency of proteins as in agammaglobulinaemia, haemophilia and afibrinogenaemia, but also to formation of proteins which differ from "normal" proteins in only one or two amino acids. Sickle cell haemoglobin (Hb S), for example, differs from normal adult haemoglobin (Hb A) in a single amino acid: valine having replaced glutamic acid (Ingram 1957). Many other types of haemoglobin exist and it is probable that some also differ from normal Haemoglobin A in only a single amino acid. Some of the genes for haemoglobin types are alleles, that is to say alternative forms representing a mutation at a single chromosomal locus. Since each individual has two sets of haemoglobin genes, one inherited from each parent, he may be homozygous or heterozygous for the normal or abnormal genes. There is a high mortality in sickle cell homozygotes (Hb S/Hb S) due to anaemia. However, heterozygotes (Hb S/Hb A) who inherit the sickle cell trait may have an advantage in areas where malaria is endemic since they are thought to be less susceptible to this disease than normal individuals.

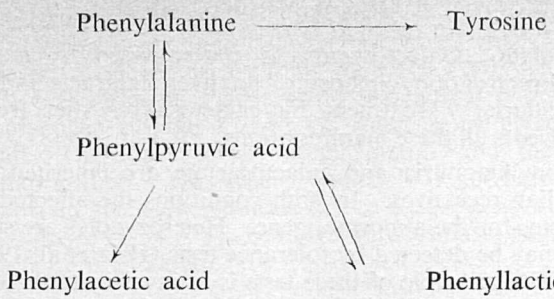
Synthesis of abnormal proteins also occurs in individuals with pseudocholinesterase deficiency. Certain patients are excessively sensitive to the muscle relaxant Suxamethonium, and it has been shown that they have a low activity of serum cholinesterase, the enzyme responsible for breakdown of Suxamethonium. Subsequent studies showed that these patients may have one of two abnormal types of pseudocholinesterase but rarely the enzyme can be absent altogether (Kalow, 1959; Lehmann, 1963).

Some Effects of Enzyme Deficiency

Garrod (1908) drew attention to the typical pattern of abnormal metabolism which might result when enzyme activity was impaired. In the chain reaction

$$A \xrightarrow[1]{} B \xrightarrow[2]{} C$$

absence of enzyme 2 would lead to accumulation of the intermediate product B and deficiency of the end product C. When the increased blood concentration of substance B exceeded its renal threshold it would appear in excessive amounts in the urine. Congenital abnormalities of tyrosine metabolism provide examples of this type of biochemical block.



In phenylketonuria, conversion of phenylalanine to tyrosine is impaired because of congenital deficiency of the enzyme L-phenylalanine hydroxylase (Jervis, 1953). There is an increase in the blood and urinary concentration of phenylalanine and its metabolites phenylpyruvic acid, phenylacetic acid and phenyllactic acid. Mental retardation which occurs in nearly all the cases, has been attributed to the toxic effects of these substances. Treatment by restriction of dietary phenylalanine has had favourable reports, but since brain damage is largely irreversible, treatment should be started as early as possible. Many infant welfare clinics are therefore attempting to pick up early cases of this rare disease by testing the urine for phenylpyruvic acid. Although preliminary reports of treatment are promising, it will not be possible to evaluate results with confidence for many years.

Blocks at other sites in the pathway of tyrosine metabolism due to genetically determined enzyme deficiency occur in albinism, tyrosinosis, alkaptonuria and congenital hypothyroidism.

Galactosaemia is another hereditary condition in which congenital enzyme deficiency leads to interruption in a chain of biochemical reactions. The deficient enzyme is galactose – 1 – phosphate uridyl transferase.

Reaction 1. Galactose + A.T.P.

Galactokinase

Galactose – 1 – phosphate + A.D.P.

Reaction 2. Galactose – 1 – Phosphate + uridine diphosphoglucose

Galactose – 1 – phosphate uridyl transferase

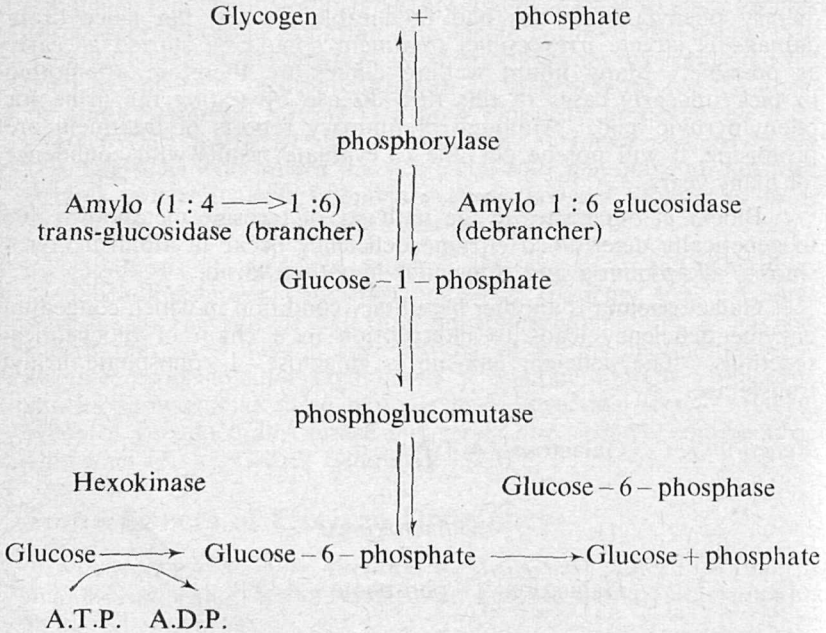
Glucose – 1 – phosphate + uridine diphosphogalactose.

Phosphorylation of galactose by adenosine triphosphate (A.T.P.) proceeds via the galactokinase catalysed reaction (Reaction 1), but

since there is a block in reaction 2, galactose and galactose – 1 – phosphate accumulate. Galactosaemia is characterised by mental and often physical retardation, cirrhosis of the liver, cataracts and generalised aminoaciduria. Treatment by galactose-free diet from birth effectively prevents all these manifestations.

Both phenylketonuria and galactosaemia are inherited as autosomal Mendelian recessives. In both conditions the affected subjects are homozygotes for the abnormal gene. Heterozygotes are symptomless but they may be detected by tolerance tests (Hsia et al, 1956; Hsia et al, 1958). The principle of these tests is to investigate the efficiency of the enzyme system by giving a high substrate load. The magnitude of stress is chosen so as to produce a response in heterozygotes which differs significantly from that in normal individuals.

Other patterns of abnormal metabolism are seen in the various types of glycogen storage diseases. Deficiency of specific enzymes responsible for degradation and synthesis of the glycogen molecule has been demonstrated (Cori, 1954).



In classical von Gierke's disease, there is deficiency of glucose – 6 – phosphatase. Such deficiency would be expected to produce accumulation of glycogen in the liver since it would interfere with glycogen breakdown, but not with synthesis because phosphorylation of glucose continues via the hexokinase reaction.

Normal glycogen is a branched polysaccharide composed of glucose units which are joined by α 1 : 4 glycosidic linkages except at branch points where α 1 : 6 linkages are present. Deficiency of

amylo 1 : 6 glucosidase or the "debrancher" enzyme has been postulated in a type of glycogen storage disease in which degradation of the glycogen molecule proceeds by cleavage of the α 1 : 4 linkages along the branches but is arrested at the branch points. In another type of glycogen storage disease the structure of glycogen is grossly abnormal. There are fewer branch points and the branches are longer than normal. This type of molecule might be produced by an abnormality in glycogen synthesis due to a deficiency in the "brancher enzyme" (amylo [1 : 4 $\longrightarrow$ 1 : 6] transglucosidase) responsible for the production of branching.

Gene Frequency

Most of the conditions described in this article are thought to arise from "point mutational changes", that is from single discrete changes in the D.N.A. coding units of genes. The resultant mutant genes are usually recessive, that is they do not manifest in the heterozygous state. However, as has already been mentioned, it is sometimes possible to detect an abnormality in the heterozygous carrier by means of specific tolerance tests. Since an individual affected by the disease is a homozygote, it follows that both his parents must have been carriers for the mutant gene. As the parents are usually symptomless, they are usually heterozygotes. The rarer a mutant gene in the general population, the lower the likelihood that chance marriage partners will both be carriers for the gene. When genes are extremely rare, heterozygotes occur in only a few families. Homozygotes are therefore only likely to arise when members of these families inter-marry. Thus a high consanguinity rate amongst parents of children with certain inborn errors of metabolism suggests firstly, that inheritance is by autosomal recessive genes, and secondly that there is a low frequency of the gene in the general population. The table gives an indication of the frequency of heterozygous carriers as compared with the frequency of affected individuals.

Incidence of Affected Subjects (Homozygotes)	Incidence of Carriers (Heterozygotes)	Ratio of Carrier/Affected
0.1%	6%	60 : 1
1 %	18%	18 : 1
5 %	35%	7 : 1

The Future

Only a few examples of the known inborn variations of metabolism have been described in this paper. Many more are known or suspected. Muscular dystrophy, coeliac disease, fibrocystic disease of the pancreas, lipid storage disease, gout and diabetes mellitus may eventually join the list. Cystinuria, one of Garrod's four original errors of metabolism, however, is now known to result from a renal

abnormality and not from a block in intermediate metabolism, (Dent et al, 1954). Nevertheless, it is possible that tubular reabsorption also depends on the integrity of enzyme systems.

With a few exceptions, treatment of metabolic errors is disappointing. At present treatment consists of altering the biochemical environment. For example, by diet in galactosaemia and phenylketonuria; by the administration of dimercaptopropanol or penicillamine to increase the excretion of copper in Wilson's disease; by the administation of steroids in congenital adrenogenital syndrome; and by avoiding administration of suxamethonium to subjects with pseudocholinesterase deficiency.

Theoretically the optimal solution would be to prevent or correct abnormal structure of D.N.A. Although such fundamental genetical ideals are a long way from being realised, research workers should not lose sight of this ultimate aim.

Acknowledgment. I am grateful to Professor P. E. Polani for many helpful suggestions.

REFERENCES

Cori, G. T. (1954), *Harvey Society Lectures,* **48**. 145.
Dent, C. E., Senior, B. and Walshe, J. M. (1954), *J. Clin. Invest,* **33**. 1226.
Garrod, A. E. (1902), *Lancet* **2**. 1616.
Garrod, A. E. (1908), *ibid,* **2**. 1, 73, 142, 214.
Garrod, A. E. (1923), *Inborn Errors of Metabolism,* Oxford.
Harris, H., Robson, E.B. and Siniscalco, M. (1958), *Nature,* **182**. 452.
Hsia, D. Y., Driscoll, K.W., Troll, W. and Knox, W.E. (1956), *ibid,* **178**. 1239.
Hsia, D. Y., Huang, I., Driscoll, S. G. (1958), ibid **182**. 1389.
Ingram, V. M. (1957), *ibid,* **180**. 326.
Jervis, G. A. (1953), *Proc. Soc. Exp. Biol., N.Y.,* **82**. 514.
Kalow, W. (1959), *Biochemistry of Human Genetics.* Ciba Foundation Symposium, 1959. p. 39.
Lehmann, H., Liddell, J., Blackwell, B., O'Connor, D. C. J., Daws, A. (1963), Brit. med. J. I.1116.
Poulik, M. D., Smithies, O. (1958), *Biochem. J.,* **68**. 636.
Scheinberg, I. H., Gitlin, D. (1952), *Science,* **116**. 484.
Smithies, O. (1955a), *Nature,* **175**. 307.
Smithies, O. (1955b), *Biochem, J.,* **61**. 629.

REPRINTS

Reprints of the following four articles recently published in the *Gazette* will shortly be available:—

Bermondsey and Southwark IV, "*Life and Health*", by Roger Blaney.

A Scientific Background to Clinical Medicine:—

1. *Fundamental Genetics* by B. J. Rickard.
2. *The Biochemistry of Genes* by W. L. G. Gent.
3. *Human Chromosomes and their Abnormalities* by Janet Northfield.

These and subsequent reprints may be obtained, price 1s. each, from the Manager, Gazette Office. All those who have requested reprints so far will be receiving them within the next few days.

We will be publishing all the subsequent articles in the series "A Scientific Background to Clinical Medicine", in reprinted form, as well as other main articles, as and when the demand arises.

ENDOCRINE TREATMENT OF MENSTRUAL DISORDERS

by J. A. P. TRAFFORD

Functional uterine bleeding means an abnormal menstrual loss in frequency, in amount or in regularity, unassociated with any gross local pathology. It is a problem which is often approached by doctors with misgiving and a feeling that the whole subject is esoteric and vague. Although not as much is yet known about the aetiology and biochemistry of these disorders as one would like, it is possible to approach such problems systematically and after analysing the type of disorder to prescribe rational treatment.

Throughout this discussion it will be assumed that the patient is suffering from true endocrine bleeding, and not from any gynaecological pathology which is, of course, the first and most important cause to exclude. For the sake of simplicity, only one example of either oestrogen or progesterone will be mentioned, though any other preparation in equivalent dosage would probably be as satisfactory. As an example of oestrogens Stilboestrol will be given, and as an example of Progestogens, *Primolut N* (*Norluin; Norethisterone*) will be used.

The first points to be established in a patient with any disorder of menstruation are the original normal pattern (if it ever was normal) and secondly the new disordered pattern. By and large, special tests are still in the experimental stage and although there is no doubt that they will soon provide important information, they are at present of little value in routine practice. As stated above, it is assumed that clinical examination is normal.

A practical division of Menstrual Disorders is as follows:—

1. *Dysmenorrhoea and Pre-Menstrual syndromes.*
2. *Menorrhagia and Polymenorrhoea.*
3. *Metropathic Bleeding.*
4. *Metrorrhagia.*

This scheme covers most of the complaints with which a patient may present.

1. DYSMENORRHŒA

This is of two types—Congestive and Spasmodic. The first means pain before the period which builds up until the start of the period, and is relieved by it. This type of dysmenorrhoea is often associated with local pelvic disease and is never solely of endocrine origin. The second type, spasmodic dysmenorrhoea, is the common type of "painful period". It is usually pronounced on the first day of the period and disappears during the next two or three days. There is much evidence that this type of dysmenorrhoea only occurs when

ovulation has taken place. It is certainly true that most anovular cycles produce painless periods and also that suppression of ovulation relieves the condition in most people. However, the degree to which patients are worried is very variable and reassurance, simple analgesics and well-tried remedies like hot-water bottles locally, are usually sufficient.

If it should be necessary to inhibit ovulation, the best method today is to use one of the contraceptive pills—*Enavid, Conovid* or *Anovlar* from the 5th to 25th day. Stilboestrol 2 mg daily from the 5th to 25th day or *Primolut N,* 15 mg from the 5th to 25th day may also be used, but are of no advantage over the contraceptive pills, and may be attended by more side effects.

Occasionally patients who complain of normal periods but troublesome ones, mean that they feel depressed, irritable and bloated just before a period. This is often associated with mastitis, skin changes and quite severe swings of mood. Headaches are more common and sometimes migraine has a very marked premenstrual incidence. Simple sedatives may help these patients but often more active therapy is needed. Progestogens from the 15th to 25th day are of value—*Primolut N,* 10 or 15 mg, day 15 to 25. Occasionally a short course of diuretics is useful—*Saluric* G1 alt die, day 20—28.

Whether endometriosis is primarily a gynaecological or endocrine disorder, once the diagnosis has been made the initial treatment should be endocrine. Prolonged continuous high dosage of a contraceptive pill will inhibit ovulation and prevent any menstrual loss. Treatment has been very successful and in some cases pregnancy has followed cessation of therapy with apparent cure of the condition.

2. MENORRHAGIA

In this condition the periods are more or less regular but the loss is excessive. It seems on present evidence to be an abnormality of the luteal phase of the menstrual cycle, perhaps due to an absolute or functional progesterone deficiency. Nearly all patients who really have this condition respond well to Progesterone—*Primolut N* 10—15 mg, 15th to 25th day.

Polymenorrhoea, which means periods at too frequent intervals, e.g. every 10 days—3 weeks, can be treated in the same way. A Progestogen is given just before the expected period and continued for 10 days. If a woman menstruates on every 15th or 18th day, it is reasonable to prolong the cycles by giving *Primolut N* 10—15 mg from the 14th to 24th day, thus ensuring cycles every 27 or 28 days.

3. METROPATHIC BLEEDING

This is a term deliberately used to cover numerous patients who bleed off and on, with no regularity, and indeed may bleed non-stop for weeks. The term *Metropathia Haemorrhagica* applies to a particular pattern which is classically of cycles of amenorrhoea for two months or so, followed by continuous bleeding for weeks. It is thought to be due to the unopposed action of oestrogen causing an abnormally proliferative endometrium (the "Swiss Cheese" endo-

metrium) which finally is incompletely shed with prolonged bleeding. It is associated with follicular cysts of the ovary and no true formation of the corpus luteum.

Whether the disease conforms to the more classical pattern, or is of the less-defined type, the two objects of treatment are to stop the bleeding and to prevent a recurrence by promoting normal periods.

The bleeding can usually be stopped by giving *Primolut N* 20 mg daily, until the bleeding ceases. This is then reduced to 15 mg daily for 10 days and then stopped. A further period should occur 3—4 days later with complete shedding of the endometrium. Further courses of 10 days can be given 14 days after each "period", (which is really a withdrawal bleed) for the next three cycles. After that therapy should be stopped to see if the periods will continue normally. If they do not, further courses may be given. Metropathic bleeding is particularly likely to occur either at the menarche or menopause. In the first case the periods usually settle down to a regular rhythm and in the latter they will eventually cease. Menopausal metropathia is often treated by hysterectomy which is unsuitable at the time of the menarche.

It is possible to treat bleeding with oestrogens. This may seem anomalous but it would appear that there is a certain range of oestrogen levels at which bleeding occurs. Above or below this range bleeding ceases. Giving Stilboestrol in high dosage raises the level above the bleeding threshold, and halts the vaginal loss. The usual dose is 5 mg 3 hourly until the bleeding stops. It is then continued at a level of 5 mg daily for 21 days, after which the whole process is repeated. Alternatively, the bleeding can usually be stopped by 20 mg *Premarin* intravenously, followed by 7.5 mg daily for 21 days.

It would seem more logical and scientific to use a progestogens and it is these which should now be tried first.

4. METRORRHAGIA

This means intermenstrual loss. This always merits an expert gynaecological opinion as it often has a serious cause. If this is excluded, and if the loss is troublesome, it can be treated in the same way as polymenorrhoea. However, apart from people in the early months on a contraceptive pill, it must be stressed that this is not usually an endocrine problem, and a gynaecological opinion should always be sought first.

It may be noted that androgens have not been mentioned throughout this article. This is because the discovery of the oral progestogens have rendered them obsolete in the treatment of menstrual disorders. They are unphysiological and are associated with many undesirable side effects which are often irreversible. There is considerable advantage in using drugs which are free of such side effects, and whose effects are reversible. At least the last state of the patient will not be worse than the first, which is quite possible with androgens. You are not likely to have a happy and satisfied patient if you replace her mastitis and dysmenorrhoea with acne and a bushy moustache!

A Complication of a Christmas Party

by MICHAEL BARLEY

On January 5th, 1963, a small, fair-haired toddler, aged 17 months, was admitted to the Evelina Hospital, having been troubled by wheezing, a chesty cough for two or three days, and a recent attack of croup. For two days he had been coughing and crying and not eating. The doctor had given him penicillin and another medicine which was not named, but there had been no change in his

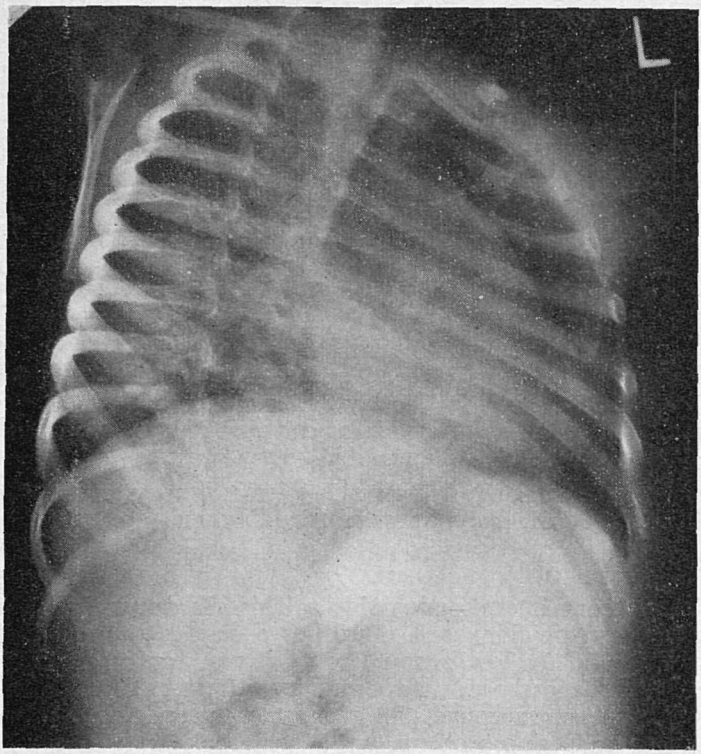


Figure (*i*): Left lateral oblique showing partial collapse of left lower lobe.

condition. The child also had a previous history of recurrent bronchitis. He lived in a flat with his mother and eight siblings.

On examination, he was pale and listless, and kept up a monotonous, tearless wail, punctuated by rasping coughs, but showed little interest in his surroundings. In the respiratory system, both sides of the chest moved well and equally, the percussion note was resonant, and fine râles were audible at the left base. Examination of the other systems revealed no abnormality. A provisional diag-

nosis of recurrent bronchitis was made, and the child was admitted for investigation and treatment. Radiological examination of the chest on the day of admission revealed nothing specific, but one four days later (reproduced here) showed signs of partial collapse of the left lower lobe. The physical signs in the chest had altered; there was absent vocal fremitus, dullness to percussion, and some audible crepitations, over the left lower lobe. In view of the changing signs, the possibility of an inhaled foreign body was considered.

Further interrogation of the mother revealed that on December 27th the whole family had been in the living-room making preparations for a party. While father was cracking nuts the child would pick up the kernels and put them in his mouth. On one occasion he choked violently, and was at once up-ended and pounded on the back by his mother. He coughed up a small nut, and it was thought that all the nuts had been recovered. With this further information in mind, a thoracic surgeon was asked to see the child, and at bronchoscopy a disintegrating peanut and husk were found and removed piecemeal. Later that day the child coughed up another fragment. The next day his lung had re-expanded, and only a few crepitations, over the left lower lobe. In view of the changing signs, persisted over the next few weeks, a second bronchoscopy was performed and bloodstained secretions were removed from the left main bronchus. Over the next few days his chest cleared considerably, so he was allowed home to be followed up as an out-patient. His parents were warned of the hazards of nuts to young children.

Acknowledgments are due to Dr. MacKeith, at whose suggestion this account was written, and to Dr. Storey for his great help in writing it; also to the Photographic and X-ray departments for the X-ray film here reproduced.

Photographic Society Annual Exhibition

The Exhibition will be held this year in the Gordon Museum from June 10th to June 10th, by kind permission of Professor Keith Simpson.

Any prints or colour slides of any sort, shape, or size, will be gratefully accepted for the Exhibition, and should be left in the Museum by 7th June.

OBITER DICTA

Sir Russell Brock:

"Do you lie awake at night thinking about the pulmonary 2nd sound? If you don't you should do".

Mr. Reading:

"The trouble with this job is that half the patients are deaf".

Mr. Ross, after a Combined Round:

"I think some people actually enjoy being physicians".

Guy's Hospital Nurses League

Annual General Meeting

The 63rd Annual General Meeting of the Guy's Hospital Nurses' League was held in the Physiology Theatre on Wednesday, May 8th, 1963. This was preceded by Evensong in the Chapel, when members were delighted to hear Mr. Royle (Guy's Chaplain 1931—1935) give the Address. He was obviously thrilled to be with us and said how much he had appreciated his time here. He stressed the need for quiet times in our lives, and spoke of the value of ward prayers.

The Physiology Theatre was packed for the Meeting and we were sorry to see so many sitting uncomfortably on the stone steps or standing in the gallery. Perhaps this will move the hearts of the powers that be to remember this when considering new building plans. Miss Taylor, Chairman of Council, welcomed members, the President and Miss De La Court, the Guest Chairman. Miss De La Court is a Guy's gold medallist and has become one of our best-known members. A message was read from Mrs. G. H. Recknell (née Addison) saying that she would be with us very much in spirit. It was agreed unanimously to send her our love and good wishes. It was also agreed to send greetings and good wishes to Lord Cunliffe, Miss Cawthorne and Miss Hogg, and also to send Miss Zygouras a message of thanks for her work as Secretary for 30 years and our good wishes. Miss Taylor then introduced Miss A. M. Johnson, the new Matron and Honorary Secretary of the League, saying she had already had opportunities of seeing how keenly interested Miss Johnson was in the League and welcomed her most warmly into the Guy's family.

Miss MacManus, the President, added her welcome to the members and to Miss Johnson. She reminded us that one of our previous Matrons who was not a Guy's trainee, had become a Dame Grand Cross, Order of the British Empire, Dame Sarah Swift.

Miss De La Court dealt with the agenda most efficiently. Matron, the Honorary Secretary, presented her report and stated how happily she had been awaiting the opportunity to welcome the members not as a group, but as very individual people in " this unique family". She thanked members for their good wishes and mentioned particularly those members of Council who had given her so much assistance. Matron thanked Sister Perkins for her great contribution, and also all members of her Office Staff, both Nursing and Secretarial. Members were sorry to hear of Lord Cunliffe's illness, but were delighted to learn that he was now convalescing. Matron spoke most warmly of all the help and kindness she had received from Lord Cunliffe during her first months of office and read a message from him to the League. Members were most delighted to receive this. Matron gave an outline of future plans in the School of Nursing and for post-graduate education, which she hoped would increase considerably. Matron emphasized the need for the care of the elderly members of our family. In conclusion, Matron stressed that all who were at Guy's to-day, were ceaselessly aware of the inheritance which League members in their turn had enhanced and of the need to instil this sense of inheritance into those who followed.

The Balance Sheet was presented by the Honorary Treasurer, Mrs. Shackle. The adoption was proposed by the President, who then presented to Mrs. Shackle on behalf of the League, a small gift in token of her devoted service as Honorary Treasurer for 24 years. Members happily endorsed this in the usual way.

Mrs. Blaikley reported on the progress of the Hilda Gration Memorial Fund. This stands at £650, and many letters of appreciation of Sister Hilda's work had been received. Miss Taylor reported the decision of the Council regarding the form of the Memorial. The Council had decided to support the suggestion of a Library or Study to be called the Hilda Gration Room and to place in a suitable position in the School of Nursing, a board on which the names and dates of the Principal Sister Tutors be inscribed, similar to the one hanging in the Matron's Office. On behalf of the League, Miss Taylor thanked Mrs. Blaikley for her work in connection with the Memorial.

The Superintendent gave an interesting account of plans for the future of Guy's. The Meeting finished in record time and after the usual vote of thanks, members adjourned to the Nurses' Home for tea and talk.

FLORENCE TAYLOR.

CORRESPONDENCE

Films of Guy's.

SIR, Several months ago you published a letter from an old Guy's man, Dan Paget Davis, of P.O. Box 178, Eshowe, Zululand, South Africa, in which he asked whether some organisation or unit might make an 8 m.m. film, if possible, with a taped sound track to accompany it, recording changes, improvements and other relevant aspects of life at Guy's, for circulation among Guy's men all over the world.

This was an idea which caught the imagination of some of us who are interested in the art and practice of the motion picture, and in particular both of us had informal discussion as a result of which we are writing this letter. Briefly our plan is to use some of the material we have already filmed in and around Guy's, and to add to it suitable material provided by other 8mm. cinephotographers, to make an experimental series of short Guy's newsreels or topical features, each running from about ten to twenty minutes. Details of finance, and technical matters such as editing, titling, and provisions of commentary, can form the subject of joint endeavour and pooled skills once the material becomes available. Any Guy's men interested in contributing, and perhaps linking the project to a Film Society in association with the existing Photographic Society of the Clubs Union, are invited to get in touch with Mr. Engel (Dept. of Medical Photography) in the first instance.

At the moment we have nothing in the way of money or organisation. What we do have is some filmed records taken by ourselves and others, and an interest in following up Dr. Paget Davis's suggestion. There is always lots happening at Guy's, and no time like the present for filming some of it. The first thing is to discover who is interested, and what they can contribute.

Yours, etc.,

D. STAFFORD-CLARK.
C. E. ENGEL.

Guy's Hospital.

The Art of Medicine.

SIR, I agree most heartily with Dr. Hopkins' letter (*Gazette*, May 4) that the human side of medicine should not be neglected in the pursuit of science, and with the Editors' note that science and art should be complementary.

I, like Dr. Hopkins, was lucky as a student, for I was on the Jacobson firm with Hurst and Hughes as co-dressers. Hurst I knew intimately for the rest of his life. Ryle, I knew, but not so well. Jacobson, like Hurst, had a profound knowledge of the "science", but taught far more than this. A good doctor must be well grounded in all the science of his profession, but he must also have the art, the art of inspiring confidence. Without it, however good his science, he is a poor doctor. The art cannot be learned from books, but can be learned if he keeps ever in mind that each patient is a human being who has come to him because he is in trouble. It is an attitude of mind and adds nothing to an overloaded curriculum. The earlier the habit is acquired, the better. He must make it his business to know all about the patient and be diligent in getting a full history, however tiresome it may be. This and a careful clinical examination will not only go far to gain the patient's confidence, but may save serious mistakes that can happen when a diagnosis is founded on a bundle of laboratory reports.

People, when they are ill, lose confidence in themselves and worry. There is nothing like worry for delaying recovery. I hesitate to try to give a scientific reason for this, but in my mind I imagine that if the higher centres in the brain are stopped worrying, they allow the lower centres to get on with their more vital functions unhindered. Explanations, reassurance and even bullying at times, all have their place and alcohol may be a great help.

From the beginning of my letter it will be apparent that I must be in many ways out of date and out of touch, but it seems to me that the "art" can never

be out of date however advanced the "science". Some of my doctor friends, brought up in the old school, and their relations, have complained bitterly how cursorily they had been treated in hospital; tests done, a diagnosis made, and treatment ordered, but never a word of explanation. It is a frequent complaint by patients that they are told nothing, and there is nothing more worrying than being kept in the dark.

When the N.H.S. was in the process of birth it was feared that the personal touch would be lost. This has proved only too true. If the art is not to be lost altogether, teachers must, like Jacobson or Hurst or Ryle, see to its preservation. But I am pessimistic; the race seems to be dying out. I hope I am wrong.

Yours, etc.,

E. W. SHEAF.

Lark's Hill, Longdown,
Guildford.

Guy's Hospital Theatre Club.

SIR, It has been said that " conscience does make cowards of us all", but we would like to assure aspiring producers that they need have no qualms about stepping forward with their offerings for the Club's December production. The Committee are most anxious to obtain as wide a selection of producers and their plays as possible so that a really suitable choice may be made for this most important event at the close of the Winter term. The Secretary will be delighted to hear from anyone who wishes to stage a play for the Club.

We would like to take this opportunity of warmly welcoming Professor R. Warwick, Dr. D. J. Anderson, Mr. D. London and Dr. J. Willis to the Club as Vice-Presidents. Their presence enriches the already highly distinguished list of Club officers.

An especial appreciation on behalf of the whole Theatre Club is due to the retiring secretary, Eric Tiller. His unstinting services in furthering the aims of the Club are well known to all: indeed, the past two years of his astute direction have seen the Club progress to a position that is prosperous both in financial matters and dramatic activities. His continued presence on the Committee ensures that the Club will maintain this healthy countenance.

Yours, etc.,

NICOLAS H. FLOWER,
Hon. Secretary of Theatre Club.

Guy's Hospital.

SIR, Recently an attempt was made to assess the movement of people and goods within the hospital. This is part of an investigation undertaken for the purpose of deciding the most advantageous way of siting different departments in relation to each other, and also to assess the volume of traffic both of goods and personnel to and from these departments.

May I take this opportunity of expressing my sincere thanks to the preclinical students who assisted in this census, to the Dean for permitting them to do so, and to all who have co-operated so willingly in giving the information requested.

Yours, etc.,

PHILIP J. HELLIWELL.

Department of Anaesthetics,
Guy's Hospital.

THE INNOMINATE CLUB

The Annual Dinner will be held at the Trocadero Restaurant on Friday, 7th June, 1963. The Chairman will be S. V. Strong. The cost of the dinner will be 37s. 6d.

Would those interested, please apply: G. T Hankey, 89, Harley Street, W.1 (WEL. 4777).

REVIEWS

THE SPECIFICITY OF SEROLOGICAL REACTIONS.

By KARL LANDSTEINER. Dover Publications, New York. 1962. Pp. 330. *Price* $2.

Until Landsteiner began his studies on " synthetic antigens " in New York shortly after the first World War, immunologists had been concerned almost wholly with the reactions of the body to various toxic and other products of pathogenic bacteria. Within a few years, this essentially biological phase in the development of Immunology gave place to one in which the reactions between antigens and their specific antibodies was placed on a much firmer biochemical basis. This transformation, in which Landsteiner and his school took so dominating a part, was brought about by the use of the relatively simple technical procedure of attaching small well-defined substances by diazotization to large carrier protein molecules and so creating wholly new and individually specific antigens. Landsteiner's introduction of the concept of the " haptene " or " *proantigen* " as the distinguishing feature of an antigen, has had widespread repercussions, especially in dermatology and haematology. The realization that such a coupling can also occur under more physiological conditions than those needed for diazotization, provided an explanation for the lesions of contact dermatitis, drug allergy and marrow aplasia.

The present paper-back volume is reprinted in facsimile form from the third edition of the book published in 1945, two years after the author's death. It provided a survey, unique in its scope at the time, of the whole field of serological immunology, and one which has since been used freely as a model by later authors. Indeed, so fully did Landsteiner cover this new field of the serology of synthetic antigens during his twenty years at the Rockefeller Institute in New York after he had left his native Vienna, that few significant advances have been made in it since. That he himself felt latterly that this field of serological immunity was becoming less productive seems shown by his entering in his last few years the less-explored one of the delayed forms of immunity and their pathogenesis. He realized the probable significance of these forms, and was amongst the first to appreciate that they may provide the basis for many of the immunopathological reactions that are provoking increasing interest in clinical medicine to-day.

Much new knowledge has been added to Immunology in the twenty years since the author last revised his text. But in spite of these many additions, the book retains to a remarkable degree the freshness of ideas and presentation it possessed when it first appeared and stimulated a whole generation of immunologists. It belongs, like the small volume on " Serum Sickness " by his Vienna friends, von Pirquet and Schick, to the classics of Immunology. Both books made a permanent impression on the development of the subject, and together they dominated the course of its growth over three decades.

Immunological ideas are permeating many fields of clinical medicine and surgery to-day. The increasing safety of blood transfusion, the potential applications of tissue and organ grafting, the concepts of autoimmunity, the possible control of some forms of neoplasia and the hazards that attach to use of certain potent drugs, are all examples of this infiltration. In immunopathology, many of these ideas are still misty in outline, and conjecture figures largely in their discussion, but if these beliefs are to emerge in clearer, firmer forms, it can only be through their logical analysis in the light of classical immunology. For an understanding of many of the fundamental ideas that are needed for this task, there is no better single source to-day that this broad survey. Bacon once remarked that " some books are to be tasted, others to be swallowed, and some few to be chewed and digested". Landsteiner's monograph belongs to the last of these classes—to the intellectually provocative type of book to which the reader can return with satisfaction time after time.

G. PAYLING WRIGHT.

LECTURE NOTES ON PATHOLOGY.

By A. D. THOMSON and R. E. COTTON. First Edition. Pp. 1040. Illustrated. Blackwell Scientific Publications. 1962. *Price* 55*s*.

This new textbook is based on lectures in pathology given by the authors to students at the Middlesex Hospital. It is written on clean paper, in clear print, is adequately indexed and has some useful illustrations.

Its aim is to provide the essentials of pathology with a minimum of embroidery and a maximum of clarity. This it achieves by abundant use of headings and sub-headings, and further by prefacing each chapter with a tabulated summary of its entire contents. This is useful for ease of understanding and speed of revision. By the very nature of its style, therefore, the writing is concise, didactic and occasionally dogmatic. This naturally leads, at times, to points where one feels constrained to disagree. It is up-to-date, extremely comprehensive, and has been further enhanced by the help of four extra contributors who have written some of the special sections. These include a most helpful chapter on cancer research, an important part of modern pathology, and chapters on immunity, diseases of the eye, and haematology, all of which are extremely detailed.

Omissions are few, but some criticism must be made by the reviewer.

Pathology is defined at the beginning as " The study of disease and disease process". Unfortunately all too often the disease process is left undone, e.g., in the pathology of measles a list of the lesions found is given, but no indication of the sequence in which they tend to occur, the duration of their effects or their order of resolution is present. This is found in chapters throughout the book.

The chapter on special forms of injury neglects mechanical injury, and the different types, e.g., abrasions, lacerations, bites, etc., and also the factors influencing the outcome of the injury. Lesions due to chemical insults, e.g., gases, heavy metals, corrosives, etc., are also omitted.

Definitions are at times faulty, e.g., inherited and familial disease are defined as the same thing, whereas, in fact, they are not.

In the chapter on " The Nephrotic Syndrome", the authors would have been well advised to avoid the term " Nephrosis". Since this is interpreted differently by various people, and in the way that they have used it, they might have substituted the term " Acute tubular necrosis".

A few of the chapters are covered too sketchily, but in the main the book is detailed and comprehensive.

In conclusion, it is no substitute for the " orthodox book" from which the undergraduate student should be encouraged to learn his pathology, but should prove useful for those who have covered the subject elsewhere, and wish to systematize their knowledge in mainly tabular or similar form during pre-examination revision. It is probably too detailed for most students and is therefore to be recommended to those studying for higher qualifications.

MALCOLM B. WILLIAMS.

ILLUSTRATED PHYSIOLOGY.

By A. B. MCNAUGHT and R. CALLANDER. Livingstone. 1963. Pp. 287. *Price* 30*s*.

The representation of dynamic states by diagrams is the aim of the authors (one a physiologist, the other a medical artist) of this book. That they failed in many instances is seen in the relatively large amount of writing which makes many diagrams difficult to grasp and whole pages forbidding. The book, which could be of value to the student of physiology who prefers illustrations to text is mainly published for those without any conventional training in the biological, physical or chemical sciences, and therefore has greater value for the training of medical auxiliaries than for medical or dental students. However, the medical auxiliaries may find difficulty in understanding some of the physiological terms which accompany the diagrams.

The production is very good, and considering the number of diagrams and the use of colour, the price is moderate.

I. MACDONALD.

CHEMICAL PATHOLOGY OF THE NERVOUS SYSTEM.

Edited by J. FOLCH-PI. Pergamon Press. Pp. 720. *Price* £7.

REGIONAL NEUROCHEMISTRY.

Edited by S. S. KETY and J. ELKES. Pergamon Press. Pp. 540. *Price* 84*s*.

These two books record the proceedings of the third and fourth International Neurochemical Symposia held in 1958 and 1960. "The Chemical Pathology of the Nervous System" contains 63 separate papers (with over one hundred authors) each followed by a summary of the contributed discussion. Regrettably but understandably the volume did not appear until three years after the symposium was held. The papers in the first half of the book relate to medicine and neurology covering such topics as: nutritional disorders, inborn errors of metabolism, the pathology of copper, demyelination and convulsive states. The second half is concerned with the biochemistry of mental illness sub-dividing into sections on hormones and enzymes, carbohydrate metabolism, protein metabolism, amines, and the biochemical aetiology of mental disease. Outstanding among those authors who present a critical review of a broad field are Donald Tower (on convulsive states) and Seymour Kety (on biochemical theories of schizophrenia).

The book as a whole reflects the enormous growth in neurochemical knowledge in the last fifteen years. Naturally it is already significantly out-dated, particularly in the chapters on lipid metabolism and in the omission of recent advances in histochemistry. It is beautifully produced, but contains numerous proof-reading errors (most spectacularly figures 1 and 11, pages 471 and 491, have been transposed).

"Regional Neurochemistry" subtitled "the regional chemistry, physiology and pharmacology of the nervous system", provides the biochemist's answer to the physiologist's allegation that biochemists when trying to understand how the brain works always begin by converting it into a uniform homogenate. There are no review articles, each author merely reporting his own work. For the most part the discussion is not included.

No new principles of importance to physiologists have emerged yet, except for the demonstration that several pharmacologically active agents and some enzymes believed to be involved in synaptic transmission are found in specific sub-cellular fractions of brain homogenates. The main excitement of this book, however, lies in the great number of speculations it provokes about the functional significance of regional differences in the nervous system. This is a field in which collaboration between biochemists and physiologists is likely to prove extremely fruitful.

B. S. MELDRUM.

AIDS TO SURGERY.

By M. HARMER and G. M. LUNN, Balliere, Tindall and Cox.

9th Edition. 1962. Pp. 360, 26 illustrations. *Price* 15*s*.

Aids to Surgery has indeed withstood the test of time admirably, for Cunning wrote the first edition in January, 1904, and for the past 58 years the book has enjoyed popular support from the medical profession. In its present compact form, its popularity will no doubt continue.

Every concise book of this kind has unavoidable inherent faults and drawbacks, and to the new editors, though they have done their work admirably, must go the genuine criticism that on the whole the book is nothing more than a synopsis—Cunning never intended this.

This book is indeed a very concise comprehensive "textbook" of surgery, for it contains very brief chapters on almost every topic in general surgery.

Each chapter is well written and the information throughout is remarkably up to date; the writing, however, is not as lucid as one might wish—indeed it is dry and very dull. The very interesting sections on the jaw, alveoli, hydrocephalus, cerebral tumours and skin grafting are well worth reading.

I recommend this book for quick reference. In my opinion the chapters are too brief and fail to stress the basic principles of general surgery. I thus do not advise the average student to read this book for finals, certainly not for the London M.B.

J. M. S. HAYFRON-BENJAMIN.

THE PHYSIOLOGY OF OCCLUSION AND REHABILITATION.

By ULF POSSELT, Blackwell Scientific Publications. Pp. 262. Price 47*s*. 6*d*.

This book gives a detailed account of the anatomy and physiology of the masticatory apparatus—it is basically sound and yet very readable.

There follows a discussion on dysfunctions, which includes periodontal and orthodontic implications. The author then goes on to describe diagnostic aids, in which no less than 29 different articulators are described.

Professor Posselt stresses the importance of functional analysis and treatment planning, with clinical examination, models and radiographs. A large portion of the book is naturally devoted to occlusal rehabilitation in which bite plates, splints, orthodontic and prosthetic appliances are all carefully described.

Each chapter is well supported by references of Scandinavian and American origin; apart from the errors in Figs. 15, 57D, and spelling errors on Pp. 104, 248, the book is well presented, and of a high standard, although rather expensive. This I feel would make excellent reading for senior students, both in prosthetics and periodontology..

Reading through the book one cannot fail to be impressed by the theoretical basis and practical results of selective occlusal grinding and adult orthodontics. This trend in modern thought seems to be slow in catching on over here, and one feels that these techniques could be used more widely than at present.

The whole theme of this book is expressed in the closing words:—

" It is quite wrong to consider occlusion as being a different concept from the points of view of the periodontist, the orthodontist and the prosthodontist. Instead of knowledge of the function of the masticatory system should be a common denominator of all branches of dentistry".

R. BOGGIA.

SPORT

SPORTS DAY

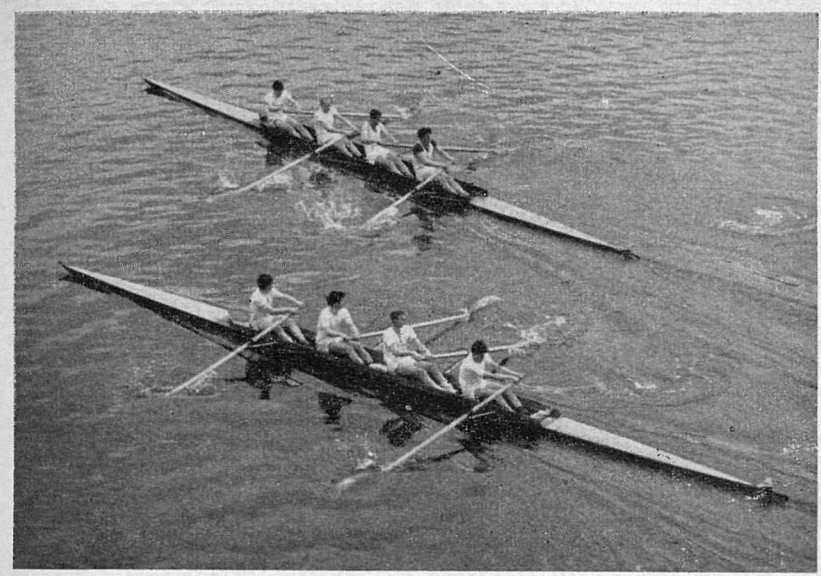
This year, Sports Day is on Whit Saturday, 1st June. This is a function that is normally blessed with good weather, and it is to be hoped that the date will not deter would-be spectators and participants. For those who do not regularly attend, the occasion is not confined to undiluted onlooking. Side-shows provide an opportunity for everybody to take part. And athletics events, serious and non-serious, judo and tetrathlon, should make a welcome added attraction.

So if you are in London this Whitsun, please make an effort to ensure that you don't miss this opportunity of attending a Hospital event that deserves more support.

CRICKET

In the match between the United Hospitals and the Cup Winners, United Hospitals won the toss and batted first and, progressing soundly, reached 85 for 3 before lunch. Thereafter, tight bowling by J. Crafts (3—55) and J. Hambleton (2—16) slowed down the scoring rate, and the United Hospital XI declared at 193 for 7, C. Walker having scored 92. Guy's started disastrously by losing H. McGregor, D. Silk and R. Myall for only 6 runs, but recovered, mainly due to a fine innings by M. Joyce (69 not out), supported in the later stages by J. A. Edgar (28), and were 154 for 8 at the close.

On the following Sunday, the 1st XI made its annual social journey to Reigate. Against the opening attack of N. Knott (captaining the side in the absence of Myall) and N. Walter, the Pilgrims found runs hard to get, particularly after lunch, when they showed signs of cerebral impairment and lack of agility between the wickets. They were eventually dismissed for 131, following good bowling by Knott (3—19) and Crafts (4—53). The Hospital made another poor start and were soon 4 for 3 wickets. However, attacking batting by Pagliero and Biggs restored the situation and an undefeated seventh wicket stand of 40 by Crafts and Reekie saw Guy's home by 4 wickets with twenty minutes to spare, Crafts having contributed 57 not out.



Guy's Four, using Italian style rig, close up on Westminster.

In the recent United Hospitals bumping races, the Club stated that they were more concerned with maintaining than improving their position of 4th. They were not entirely successful in this, being caught half-way down the course on the second day by a strong Westminster crew. However, they did row over on the first and third days.

Crew: M. A. Preece, D. P. Telling, N. A. Watson, C. P. W. Warren, D. K. C. Cooper, P. D. Venning, C. D. Hawes, Cox A. Green.

In the University of London Allom Cup, the main Guy's entry was a coxless four. This boat was rigged with two and three rowing on the same side, and bow rowing on stroke side. In the first heat against Imperial College, the four quickly took a lead of one length despite a tense and stiff start at 40. Still appearing uncomfortable, they increased their lead slowly to two lengths at a steady 36. Towards the finish, Imperial spurted to some effect, but Guy's won by one length.

In the semi-final, the four met a vast Westminster crew, who proved to be two stones per man heavier. The crew were half a length down in the first minute, but were rowing much better than in their first race. Towards the close, wild steering first by Westminster, then by the Hospital, nearly produced clashes. However, a fast sprint finish could not quite reduce Westminster's lead, and they won by one foot. In the final, Westminster lost by half a length to Chelsea College (finalists at Henley last year).

Crew: Four—P. D. Venning (bow), N. A. Watson, D. K. C. Cooper, C. D. Hawes (stroke).

A Guy's scratch Junior VIII lost its heat to King's College, and C. A. Soutar narrowly lost his novices sculls race.

Crew: Junior VIII—G. Tennekoon, M. Hodge, P. Sharp, P. Warren, N. Burton, P. Telling, R. Forrest, M. Preece, Cox A. Green.

ATHLETICS

The Club successfully came through its first match of the season, by beating St. Bartholomew's by 86 points to 68. The Hospital won the short distance and

jumping events, and the throwing events were evenly divided. Waters, with characteristic versatility, took the 100 yards, 220 yards, 120 yards hurdles, high and long jumps, and Winskill first in 440 yards, and Triple Jump and second in Javelin and 120 yards Hurdles, gave good support.

Three members of the club competed for London University in the British University Championships. Waters, who has steadily improved throughout the season, won the 120 yards Hurdles in 15.1 secs., having done 14.9 secs. in his heat. Winskill was second, and R. Morris, who has been troubled with a pulled muscle throughout the season, was third in the high jump with 5ft. 10in.

D. Waters and A. Winskill competed for the University against A.A.A., and Waters ran well to win the 120 yards Hurdles in 15.2 secs against strong opposition. A. Winskill was fourth. R. Morris, although selected, wisely decided not to jump to avoid worsening his injury.

R. Morris has been selected to represent the Great Britain "B" side in the high jump against Benelux countries at Billingham, Derby, on 8th June, and has high hopes of being fit.

RUGBY

At a recent A.G.M., Mr. J. S. Batchelor was unanimously re-elected President for the coming season. D. R. A. Lloyd-Edwards handed over to the new Captain, I. A. Baker, and the following officers were elected:—

Hon. Secretary—P. K. Peace.
Hon. Assistant Secretary—J. A. Edgar.
Hon. Junior Team Secretary—N. H. James.
Hon. School's XV Secretary—J. Davies.

In looking forward to next season, I. A. Baker pointed out that the fixture list had been strengthened with a match against Oxford University.

SHOOTING

The Rifle Club have been excelling themselves this season, and are at present unbeaten.

Two teams were entered for the Inter-College Competitions run by the University of London Rifle Club, and in very wet conditions at Bisley, Guy's "A" won the "Pafford Cup" from a field of 14.

The team scored 367 ex 400, 3 more than last year, and B. D. Glynn shot well to gain second place in the individual competition with 95 ex 100. Guy's "B" scored 339 ex 400 and were placed 11th.

In the University of London Full-Bore Championships, held at Bisley on 12th May, Guy's won the Team Championship, and M. Thomson the individual competition.

The weather conditions were good, and Guy's with 379 ex 420 beat their nearest rivals, University College, by 5 points. Of 46 competitors, in addition to Thomson with 1st place, score 100 ex 105, Glynn was placed 9th, and Jordan 10th. Thomson also won the range prize at 600 yards.

WATER POLO

Meeting a strong side in King's College I, the Hospital had an unexpected win. Being on level terms at 2—2 after the first quarter, the team sensed they had a chance and, playing good fast water polo, their only fault seemed to be a tendency to shoot from too far out. Powerful and intelligent swimming by Valentine, Barnes, Bartlett and McGlynn, ensured that the team always had an extra man, and the result augers well for the future.

The following week the Ibis side were met in a cup competition involving mainly Bank sides, and proved altogether too strong.

Reports and Results

MOTORING CLUB

The Guy's Hospital Motoring Club held their Primrose Rally on Saturday, 25th May. A wide selection of cars was entered from a Lancia sports to the usual gaggle of Minis. The navigation, which was straight-forward, but provided plenty of interesting work, took the competitors through some really picturesque and panoramic rural countryside, which on occasions tended to distract spotters and navigators alike from the true business in hand.

The most notable effort was made by P. Dodd, in a Triumph Herald, who despite a burst tyre, not only walked off with the Novices Prize but was placed third overall. The winners, not unexpectedly, were Dr. and

Mrs. Tully, whose only difficulty was in restricting their speed to the rally requirement. The weather was ideal for their convertible Rapier, although apparently at one point, their maps became mobile as well. One competitor in a 10-year-tested M.G. ended up 15 miles off course, due to a slight navigating error, but nevertheless finished only a few minutes late. He, and a few other competitors, were seen to cause somewhat stunned expressions on the faces of motorists travelling in the other direction.

The start and finish were both at a well chosen Surrey inn—the beergarden of which served ideally as a finishing point for what may be largely considered a social event. Organisation was in the capable hands of E. D. Lettington and K. C. J. Hughes, who ensured a very pleasant evening's motoring and it seemed a pity that not more entries were received.

FRED MERRIFIELD.

CRICKET

1st XI v. UNITED HOSPITALS

At H.O.P. 16th May, 1963.

Guy's, 154 for 8. (M. Joyce, 69 not out).

United Hospitals, 193 for 7. (J. Crafts, 3 for 55, G. Hambleton, 2 for 10).

Result: Draw.

1st XI v. REIGATE PILGRIMS

At Reigate 23rd May, 1963

Reigate Pilgrims, 131.
(Knott, 3—19. Crafts, 4—53).

Guy's.

H. MacGregor, c. Cooke, b. Jones	1
D. Silk, c. and b. Cooke	2
J. Crafts, not out	57
S. Davoodbuoy, c. McLand, b. Jones	0
M. Pagliero, c. Barker, b. Cooke	18
D. Biggs, c. McKenzie, b. Harris	20
J. Edgar, b. Cooke	8
I. Reekie, not out	10
P. Banks	
N. Knott	
M. Walter	
Extras	18
Total for 6 wkts.	134

Result. Guy's won by 4 wickets.

1st XI v. QUEEN'S COLLEGE, CAMBRIDGE

At Cambridge 25th May, 1963

Guy's, 183—8 dec. (D. Biggs, 53).

Queen's College, Cambridge, 80 all out (M. Walter, 5—24)

Result: Guy's won by 103 runs.

2nd XI v. GREENHEATH

At H.O.P. 26th May, 1963

Guy's, 118. (N. Knott, 40, F. Davoodbuoy, 37).

Greenheath, 103. (F. Davoodbuoy, 5—12).

Result: Guy's won by 15 runs.

ATHLETICS

Match v. St. Bartholomew's Hospital

At H.O.P. 21st May, 1963

Result: won 86—68

Individual results:

100 yds.
1st, D. Waters, 10.2 secs. 3rd, C. Wright.

220 yds.
1st, D. Waters, 23.9; 4th, C. Wright.

440 yds.
1st, A. Winskill, 53.0; 4th, P. McAndrew.

880 yds.
3rd, D. Cooper, 2 min. 9.7; 4th, P. Whitting

1 mile
2nd, P. Witting, 4.54.6; 4th, D. Cooper.

2 miles
2nd, D. Cooper., 11.19.5; 4th, P. McAndrew.

4 x 110 yds Relay
1st, Guy's, 49.

120 yds. Hurdles
1st, D. Waters, 16.4; 2nd, A. Winskill.

High Jump
1st, D. Waters, 5ft. 5ins.; 3rd, J. Domaigne

Long Jump
1st, D. Waters, 19ft. 10½ins.; 2nd, J. Domaigne.

Triple Jump
1st, A. Winskill, 39ft. 6ins.; 2nd, J. Domaigne.

Shot
1st, T. Harrison, 37ft. 2ins.; 3rd, D. Ash.

Javelin
1st, B. Hartley, 175ft.; 2nd, A. Winskill.

Discus
3rd, D. Osborn, 93ft. 8in.; 4th, B. Hartley.

RIFLE CLUB

Pafford Cup.

"A" Team.

	200*	500*	Total
B. D. Glynn	48	47	95
M. Thomson	46	47	93
P. L. Jordan	44	46	90
R. Torrance	43	46	89
			367 ex. 400

Placed 1st.

"B" Team.

	200*	500*	Total
R. S. Jenkins	44	45	89
P. W. Green	41	46	87
A. Kumar	42	44	86
R. Margerison	41	36	77
			339 ex. 400

Placed 11th.

Match v. Farncombe and Godalming R.C.

	500*	600*	Total
M. Thomson	33	33	66
P. Jordan	31	32	63
D. Glynn	33	28	61
P. W. Green	30	27	57
P. Worledge	26	23	49
			296 ex. 350

Result: Guy's won 296—282.

University of London Championships.

	200*	500*	600*	Total
M. Thomson	33	33	34	100
D. Glynn	32	33	31	96
P. L. Jordan	31	31	33	95
P. W. Green	30	30	28	88
				379 ex. 420

WATER POLO

v. King's College I.

At Grange Road, on 16th May, 1963.

Result: won 5—3

Team: D. Barnes (Capt.)., B. Valentine, K. McGlynn, J. Siegle, D. Bartlett, J. Tripp, A. Forbes.

Scorers: McGlynn, 2; Valentine, 2; Bartlett.

v. Ibis.

At Haggerston Road, on 22nd May, 1963.

Result: lost 1—5.

Team: B. Valentine, J. Peter, J. Holland, D. Bartlett, K. McGlynn, J. Siegle, D. Barnes.

Scorer: McGlynn

HOSPITAL INFORMATION

APPOINTMENTS VACANT

GUY'S HOSPITAL

Applications are invited from registered dental practitioners for the following appointments to commence on 1st October, 1963.

Department of Conservative Dental Surgery. Registrar to attend on 4 sessions per week.

Dental Officer to treat In-Patients. 1 Dental Officer to attend on 6 sessions per week. (General Dental Practitioner Grading).

Forms of application are obtainable from, and should be lodged with the Superintendent, Guy's Hospital, London, S.E.1., not later than **Wednesday 12th June, 1963.**

GUY'S-MAUDSLEY NEUROSURGICAL UNIT

Applications are invited for the resident post of **Senior House Officer,** for the six months commencing 1st August, 1963. The unit, which is housed in the Maudsley Hospital, serves both Guy's Hospital and the Bethlem Royal and the Maudsley Hospitals. Applications should be made by **22nd June, 1963,** to L. H. W. Paine, House Governor & Secretary, Maudsley Hospital, Denmark Hill, S.E.5.

GUY'S STUDENT TO CHICAGO, 1963

Applications are invited from Students taking finals in June, or September, 1963, for a clerkship in Chicago. The Clerkship can count as either senior medical ward clerk, senior dresser or special appointment.

The student may go for three months any time between July and December as convenient. The student will be given $600 by the Student Council of the University of Illinois for travel and free board and lodging.

The student will work at the Research and Education Hospital of Chicago where clinical material and teaching are of a very high standard.

Those interested can obtain more information from C. B. T. Adams. Applicants are asked to hand into the Medical School Office by 14th June, 1963, the following information:—

1. Name, Age Nationality and Place of Birth.
2. Details of education up to now, including School, Unviersity, etc.
3. Details of their education completed at Guy's.
4. Outside interests, including sports, arts, etc.
5. Positions held in the Hospital, i.e., Societies, etc.
6. Briefly state why you would like to go to the States and what you hope to benefit from this experience.

HOUSE APPOINTMENTS

1ST JUNE, 1963

Assistant House Surgeons

To :

Mr. Lawrie — Mr. P. C. H. Newbold
Appointed for 6 months, the first 3 as A.H.S.

Mr. Glover — Miss A. Y. Coxon
Appointed for 6 months, the first 3 as A.H.S.

Mr. Brain — Mr. E. H. Harley
Appointed for 6 months, the first 3 as A.H.S.

Mr. Beard — Mr. W. D. A. Foster
Appointed for 6 months, the first 3 as A.H.S.

Assistant House Physicians

To :

Dr. Baker and Dr. Houston } Mr. M. V. Smith
3 *months*

Dr. Kauntze, Dr. Joiner and Professor Butterfield } Mr. F. D. H. Birkett
Appointed for 6 months, the first 3 as A.H.P.

Dr. Mann, Dr. Scott and Professor Butterfield } Mrs. J. C. Gardner
Appointed for 6 months, the first 3 as A.H.P.

Dr. Hardwick, Dr. MacLean, Dr. Bishop and Dr. Deuchar } Mr. M. E. Conybeare
Appointed for 6 months, the first 3 as A.H.P.

Casualty Officers

Mr. J. A. Child
Mr. J. A. Clarke
Mr. J. E. C. Hern
Mr. C. I. Roberts
Mr. C. E. P. Wharton
Mr. B. M. J. Wolfe
} 3 *months*

House Surgeons

To :

Mr. Eckhoff — Mr. B. J. Main
6 *months*

Professor Atkins — Mr. J. R. W. Gumpert
3 *months*

Mr. Wass — Mr. N. J. Barwell
6 *months*

Mr. Blackburn — Mr. J. V. Harvey-Kemble
3 *months*

House Physicians

To :

Dr. Baker and Dr. Houston } Mr. R. N. Maini
3 *months*

Dr. Kauntze, Dr. Joiner and Professor Butterfield } Mr. T. C. Northfield
3 *months*

Dr. Mann, Dr. Scott and Professor Butterfield } Mr. J. A. S. Carruth
6 *months*

Dr. Hardwick, Dr. MacLean, Dr. Bishop and Dr. Deuchar } Mr. N. M. Cohen
6 *months*

Resident Obstetricians

1.1.63—30. 6.63 — Mr. P. S. Firth
1.3.63—31. 8.63 — Mr. M. V. Bright
1.5.63—31.10.63 — Mr. M. D. Steyn
1.7.63—31.12.63 — Mr. J. D. F. Bellamy

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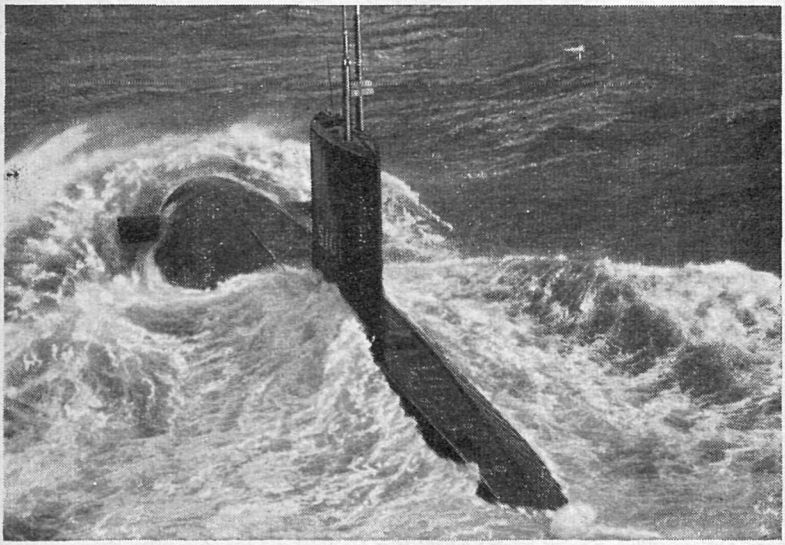

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As a Medical Officer, your pay, allowances, and gratuity—or permanent commission pension—are very good: for example, your initial pay is considerably higher than that of a civilian hospital registrar.

You can enter by one of three ways: as a Registered Medical Practitioner—your civilian experience back-dating seniority—or as a qualified doctor doing your pre-registration year, or as a student with a 2nd M.B. For qualified women doctors, there is a special short service commission.

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MO.2D

Throat and Ear House Surgeons
Miss M. Restell 3 *months*
Mr. A. G. Cumberland 6 *months*

Orthopaedic House Surgeons
Mr. C. D. Binnie 6 *months*
Mr. D. R. Wilson 6 *months*

Dermatological House Physician
1.5.63—31.10.63 Mr. P. Husband

Neurological House Physician
Mr. J. C. Simpson 3 *months*

Genito-Urinary House Surgeon
Mr. W. G. Hartfall 6 *months*

House Surgeons to the Thoracic Unit
Mr. E. E. Cockayne 6 *months*
Mr. T. A. H. English 6 *months* (S.H.O.)

Children's House Physicians
Mr. R. H. Jago 3 *months*
Mr. A. N. Nicolaides 6 *months*

House Physician in Radiotherapy and Clinical Pathology
Mr. J. H. Steadman 3 *months*

House Physician in the Department of Experimental Medicine
Mr. B. S. Worthington 6 *months*

House Physicians in Clinical Pathology
2 *S.H.O. posts readvertised*

R.M.O.s in Nuffield House
1.1.63—30. 6.63 Miss M. N. R. Pitt
1.6.63—30.11.63 Mr. G. R. Peachey
1.7.63—31.12.63 Mr. J. A. Wall

House Physicians in the Department of Psychological Medicine
1.4.63—30.9.63 Mr. D. H. Myers
1.4.63—30.9.63 Mr. W. E. M. Pryse-Phillips

Resident Anaesthetists
1.3.63—31. 8.63 Miss M. Cronin (S.H.O.)
1.3.63—31. 8.63 *Vacant*
1.6.63—30.11.63 Miss P. H. Curry (S.H.O.)
1.6.63—30.11.63 Vacant

BECKENHAM HOSPITAL

House Surgeon: Mr. F. P. McGinn

LEWISHAM HOSPITAL

House Surgeon to Mr. Le Brun: Mr. M. Singh.
House Surgeon to Mr. Jemson: Mr. F. F. T. Djabanor.
House Physician to Dr. Roberts: Mr. J. M. S. Hayfron-Benjamin.

NEW CROSS HOSPITAL

House Physician: Mr. K. M. Pagliero.

ORPINGTON HOSPITAL

House Surgeon (General Duties with Ophthalmology): Mr. B. V. H. Bray.
House Surgeon (General Duties with Gynaecology): Mr. J. W. V. Barrett.

PEMBURY HOSPITAL

House Surgeon (General Duties): Mr. S. Talbot.
Orthopaedic House Surgeon: Mr. R. J. Smith.

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House Physician:
1 *vacancy readvertised.*
House Surgeons:
Mr. D. G. Bancroft
1 *vacancy readvertised.*

ST. OLAVE'S HOSPITAL

House Surgeon:
1 *vacancy readvertised.*

J. B. BLAIKLEY,
Superintendent.

NURSING NEWS

Entered
Sister B. Stubbs to Theatres.

Left
Sister Jowett from Matron's Office.
Sister Calvert from Nuffield Theatres.
Charge J. Pring from Night Duty.
Staff Nurse Carter from Lydia.
Staff Nurse J. Chapman from Nuffield Theatres.
Staff Nurse C. Jeffree (née Glover) from Radiotherapy Department.

PERSONAL

TO LET

MARBELLA.—Luxury Flat on beach available July 16th to end July. IMP 2043 evenings.

CHANGES OF ADDRESS

Dr. D. R. Burcombe, M.B., B.S., D.Obst., R.C.O.G., 47, Loxwood Avenue, Worthing, Sussex. Tel: Worthing 5446.

Mrs. *Barbara Ghattas*, P.O. Box 378, Jerusalem, Jordan

Dr. A. L. Gunn, M.B., B.Ch., Westmead, Holbrook Lane, Chislehurst, Kent. Tel: Imperial 3361.

J. M. Holmes, Esq., M.B., B.S., M.D., M.R.C.O.G., 25, Everley Crescent, London, N.21. Tel: Lab. 3421. Consult. Rooms: 28, Weymouth Street, London, W.1. Tel. Lan. 1723.

BIRTHS

HARRIS.—On May 5th, 1963, at Southampton General Hospital, to Carol (née Gossage) S.R.N. and Peter Harris, L.D.S., a fourth son, Michael David.

HOUGHTON.—On May 9th, 1963, at Wokingham, to Verna (née Firth, M.B., B.S., D.R.C.O.G.) and *David Houghton*, a daughter (Joanna Elizabeth) sister for Andrew and Nicholas.

MURRAY.—On May 10th, 1963, at Guy's Hospital, to Jean (née Purvis) and Dr. Brian Murray, a son, Douglas Gordon, brother for Stuart.

SHANNON.—On April 19th, at Sandling House, Hollesley Suffolk, to Patricia (née Goldsworthy, S.R.N.) and Colin Shannon, M.B., B.S., a second son, George Russell.

MARRIAGE

GHATTAS—ELLIS.—On 12th May, 1963, at St. Saviours Church, Jerusalem, Jordan, Issa Tewfik Ghattas to Barbara Gwendolyn Ellis, S.R.N., S.C.M., O.N.D.

GUY'S HOSPITAL GAZETTE

Vol. 77
No. 1954
fortnightly
one shilling

15th June 1963

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Editors *W. G. Reeves*
I. A. Baker

Sports Correspondent *E. Tiller*

Guy's Hospital, London

PASSIM

At a recent meeting the *Gazette* committee received the resignation of Simon Wood, who has been the Assistant Editor for the last six months. During this time many changes have taken place in the production, design and content of the *Gazette*, in which he has been intimately concerned. The original photograph for our present cover was only a part of the photographic work which he has done for the *Gazette*, and in this and other ways the *Gazette* owes much to his enterprise.

The new Assistant Editor is Ian Baker, who has been our Sports Correspondent since last September. This latter task is now taken over by Eric Tiller.

Royal Visit

In 1960, the Prince Philip chair of Paediatric Research was created and a formal Paediatric Research Unit founded at Guy's. This Unit, now known as Cameron House, was established by the Spastics Society in conjunction with the University of London and Guy's Hospital Medical School, and it is now actively engaged in research involving experimental pathology, biochemistry, tissue culture and chromosome studies.

On Tuesday last the courtyard between it and Keat's House, once St. Thomas' burial ground, was graced by a stately array of potted hydrangeas and with a new coat of paint adorning the door of Keat's house, the scene was set for a visit by the Duke of Edinburgh. During his brief stay he saw much of the work in progress and several of the staff were presented to him.

Accents in Advertising

The *Gazette*, like other active journals, has throughout its history supported an array of advertisements. With its large, specialised circulation, business houses have not been unwilling to accept vacant sites on its pages.

In its century-and-a-half of publication, the *Gazette* has continued to carry detailed and valuable advertisements for medical, dental and more basic scientific literature and specialized equipment. The drug houses give display for their various preparations. Banking and insurance companies have continued to offer their services. Surely the advertisement appearing in the forties—"Income Tax. Your Burden is Our Business"—by a firm of taxation consultants can be no less applicable. The *Gazette*, too, unceasingly, seeks to sell its prints and photographs of the Hospital. The remaining spaces are given to more general requirements and it is these which reflect interesting trends in the supplies of the day, as well as in the tastes of manager and readers alike.

Information of the above nature is of established appeal. Other advertisements have met the changes of time. In the forties and fifties readers faced a catalogue of nutritional requirements. Cheeses, biscuits and cereals were exalted for their goodness. One venerable firm led on the journal's front page with the topical caption, "You can't disGuy's the stimulating power of Bovril". For the more gluttonous, one edition carried a whole-page combined advertisement for cakes and confectionery and three different types of sherry, as well as the varied products of a reputable local brewery. Dublin's own dark brew has rarely been ignored. It is perhaps a little incongruous that interspersed with the presentations of these wares, should be exhortations for the speedy efficiency of various laxatives. It is not surprising that cigarettes and tobacco were included in the luxuries of the time, although in these enlightened days their appeal would barely warrant support. Would the extract, "—the discerning few lighting up their * * * * with an air of solid proprietorship and quite good sense", from a *Gazette* of post-war years, still be excusable in modern medical journals?

Tastes would appear more refined in the thirties, for then tea-drinking held its place. Lipton's and Mazawattee competed with " The Doctor's China Tea". Australian Dried Fruits had a combined message. Excellent in their substance, their marketing would also, it was hoped, "encourage the British migrants and relieve unemploymen and taxation at home". From the refined to the exotic, Natural Carlsbad Sprudel Salt gave many therapeutic aids. Taken from the world-famous Sprudel Spring at Carlsbad, the compound offered relief in chronic gastric catarrh, gall stones, constipation, renal calculi, gout and diseases of the spleen.

In keeping with the wealth and leisure of the earlier years of the century, the Guy's community was kept well informed of the developing services and luxuries of the day. Photographs of the Singer "10", the Swift "12" and the "11.9" Bean, together with their proud performance figures, occupied several pages of the *Gazette* in the early twenties. "The Ideal Doctor's Car" was the current gimmick. For the domestic scene, the British Commercial Gas Association were announcing, "An Essential Luxury—Hot Baths at All Hours". Social advantages were most essential and perhaps Miss Gem Monflet's Private Dancing Classes, with a twenty-five per cent reduction for students and members of the medical profession, were well attended. Winter sports were not neglected from nine guineas all-in. Clothes for the occasion were not without attention—tailors, umbrellas, silk, felt, opera and livery hats were all given display.

From this short resumé, it is apparent that the *Gazette* service to advertisers has been full and progressive. If there is any message in the above trends, one assumes that Guy's financial position is now consolidated in other directions, for not since 1905 has there been a full-page appeal for contributions to the capital account!

GUY'S DIARY

JUNE

EXHIBITION. *The Knee.*

17th	M.	1.00	Sir Russell BROCK. Clinical Lecture. *Empyema.*
18th	T.	1.00	Dr. MANN. Clinical Lecture. *Typhoid Fever.*
18th	T.	1.00	Professor RUSHTON. Dental Clinical Lecture. *The Dentist and the Tongue.*
20th	Th.	1.00	Mr. LAWRIE. Clinical Lecture. *Gangrene.*
20th	Th.	5.00	Neurosurgical Round by Mr. Murray FALCONER. Clinical Theatre.
24th	M.	1.00	Dr. VALE. Clinical Lecture. *'Depth' of Anaethesia.*

We offer our congratulations to the following:

Dr. Paul Forman, Reader in Medicine in the Welsh National School of Medicine since 1954, has been appointed Professor of Clinical Investigation in the Department of Chemical Pathology at Leeds University.

Mr. I. J. MacQueen has been appointed Consultant Orthopaedic Surgeon to the Croydon group of hospitals.

THE PLACEBO AND PLACEBO REACTORS

The Annual Lecture to the Pupils' Physical Society was given by Dr. D. R. Laurence, Reader in Pharmacology and Therapeutics at University College Hospital.

" The lecturer should try to keep the attention of his audience by telling amusing stories on subjects they are interested in, for example, sex and baseball". This and many other amusing quotes were taken from an American book on the art of lecturing which Dr. Laurence had read before preparing this lecture. Fortunately he disregarded most of its advice and spiced the lecture with his own brand of humour.

The placebo was first used many thousands of years ago and was known to Hippocrates. It is only recently that the placebo factor in medicine has been studied. As Dr. Lawrence points out, its effect is so widespread and important in the whole field of medical and surgical treatment that much more time should be spent in its study.

Julian Huxley, in a foreword in a book published last year on Acupuncture, says, " If the patient gets better, for the patient that is all that matters". This is dangerous thinking. It is most important to know the mechanism of action of any treatment. Acupuncture is one of the placebo systems in the treatment of disease. Dr. Laurence suggests that the colectomies performed by Lane were placebo surgery. With placebos, the patient may say he is cured, and in fact may have no symptoms. It is dangerous to assume he is cured as the placebo effect may mask the real disease.

With the aid of well-selected lantern slides, Dr. Laurence showed how placebo drugs act as pharmaco-dynamic agents with toxicity and side effects, cumulative effects and the same dose-response curve as any other drug. The presence of placebo reactors in the general population has an important bearing in the trial of drugs. The placebo effect is obtained if an enthusiastic doctor gives the drug to a patient, whereas it is not obtained by a detached and sceptical doctor giving the same drug to the same patient.

The audience were most appreciative and gave generous applause for a very amusing, stimulating lecture. Dr. Maclean, as Chairman, gave the vote of thanks.

A. M. MORRIS

A SCIENTIFIC BACKGROUND TO CLINICAL MEDICINE 5

Congenital Abnormalities

by R. G. SPECTOR,
Paediatric Research Unit.

Advances in obstetric knowledge and techniques have contributed to the reductions in perinatal mortality and morbidity which have occurred over the last twenty years. Serious disease and death due to anoxia, birth injury, maternal/foetal blood group incompatability and infection have all become less common, but the incidence of congenital abnormalities has remained constant. Thus the importance of this group is increasing as preventive measures for other diseases become better understood.

In clinical practice congenital abnormalities occasionally arise because of known familial disease or harmful influences affecting the foetus in utero. In the great majority of cases, however, no known cause can be detected and the abnormality is not usually transmitted to subsequent generations. However, more is known about the anatomical mechanisms by which malformations occur, and from a study of human embryos and foetuses Willis (1958) has been able to construct the following classification:—

1. Agenesis or aplasia means non-formation of a part, due either to non-formation or destruction of its rudiment, or to absence of an earlier developed part on which its evolution depends, e.g., agenesis of the kidney resulting from failure of the ureteric outgrowth.

2. Hypoplasia is partial or imperfect formation of an organ or tissue.

3. Developmental hyperplasia, more often called hypertrophy, means growth of a part to an excessive size.

4. Failure to close or coalesce, a process for which the name dysplasia has been coined, is a frequent mode of agenesis of malformations, e.g., anencephaly, myeloschisis, spina bifida, facial fissures, ventral body wall clefts, cardiac malformations, bipartite anomalies of the female genital tract, hypospadias and coloboma.

5. Failure to canalise or separate, e.g., syndactyly, adherent prepuce, imperforate hymen and other forms of vaginal atresia and imperforate anus.

6. Persistence of vestigial structures which normally disappear, e.g., thyro-glossal duct and vitello-intestinal duct.

7. Supernumerary parts is a frequent type of malformation and is said to be due to the establishment of more than one centre of organogenesis in the particular organ formative field, e.g., polydactyly, bifid ureter and accessory spleen.

8. Ectopia of organs or tissues means their development in sites

where they are not normally found in the adult.

9. Hamartomas have been defined as malformations characterised by an improper admixture of tissues with tumour-like excess of one or more tissues, e.g., angionomas and pigmented moles.

10. Generalised abnormalities of skeletogenesis.

11. Chemical and enzyme abnormalities.

12. Tumours. These include teratomas and embryonic tumours. In addition hamartomas and inborn metabolic disturbances may predispose to tumours in later life.

In addition to this type of morphological research, at the present time much attention is focused on the investigations of possible causes of such abnormalities. The situation may be considered in this way:—

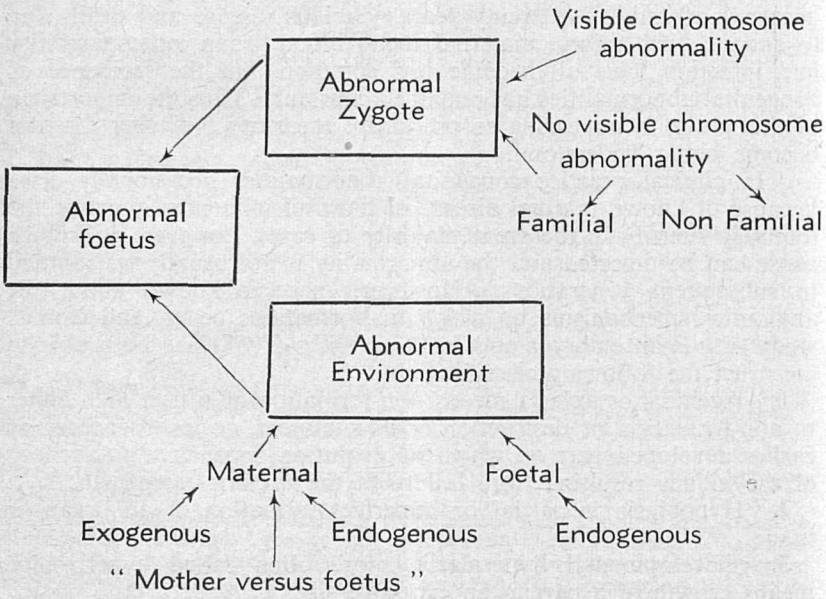

Figure 1: Factors which could produce an abnormal foetus.

Abnormal Zygote

(a) Visible Chromosome Abnormality

Tjio and Levan (1956) have shown that the normal chromosome number in man is 46 (23 pairs). Since 1956, abnormalities in the chromosome complement have been demonstrated in several diseases. In most cases of ovarian dysgenesis, for example, there are 22 pairs of autosomes and only one sex chromosome (X). The chromosome number in individuals with Klinefelter's syndrome is usually 47—there being three sex chromosomes, XXY. The somatic cells of the parents of sufferers from these diseases contain the normal complement of chromosomes but it is thought that the abnormality arises by non-disjunction of their germ cells during gametogenesis. Non-disjunction is postulated to account for the 47 chromosomes in

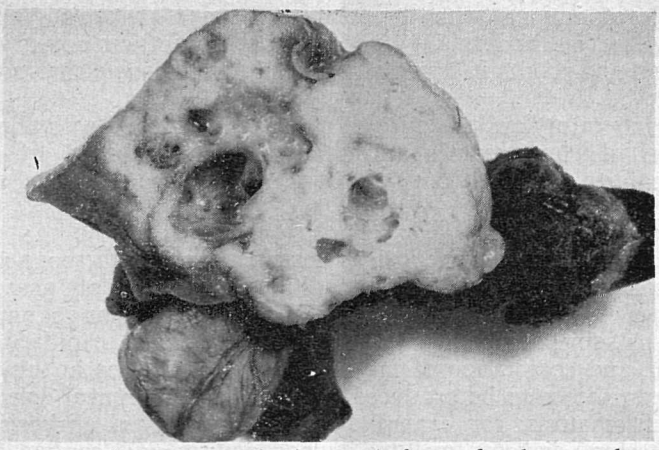

Figure 2: Congenital cystic lung: A form of pulmonary hamartoma. This is an uncommon cause of persistent cyanosis in the newborn period.

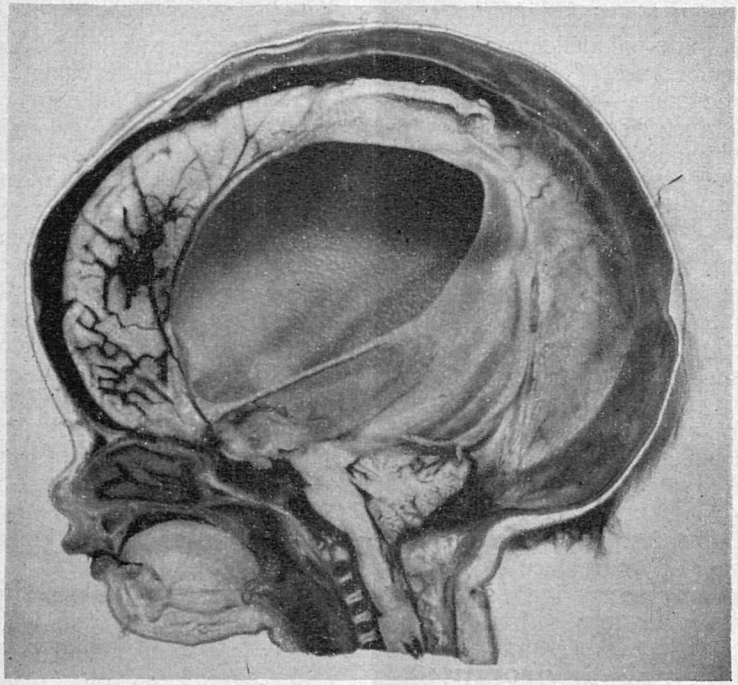

Figure 3: Arnold—Chiari malformation. The picture shows hydrocephalus with great dilatation of the lateral ventricle. The actual malformation and cause of the hydrocephalus, is an abnormal median mass of tissue arising in the cerebellum which lies over the dorsal aspect of the pons and medulla and blocks the foramina of Luschka and Magendie. The picture shows this tongue of cerebellar tissue going through the foramen magnum and lying over the cervical cord.

the cells of patients with the common form of Down's syndrome. In this case the abnormality in chromatid separation occurs during oögenesis and results in trisomy of one of the autosome chromosomes (21/22).

In laboratory animals zygotes have been produced with abnormal numbers of chromosomes and this has been followed by severe abnormalities of subsequent development. (Brachet, 1958).

(b) No Visible Chromosome Abnormality

In the majority of genetically determined diseases there is a normal chromosome karyotype. These conditions may be simply anatomical abnormalities and the pathogenesis of most of them is as yet unknown —such as some forms of polyposis coli, cleft palate, capillary telangiectasia and coarctation of the aorta. Other diseases in this group have been shown to be produced by a single biochemical defect. In haemochromatosis, for example, the enlarged liver, cirrhosis, skin pigmentation, diabetes mellitus, hypogonadism and cardiac failure may all be primarily or secondarily due to abnormally high levels of plasma iron, and this is because of increased absorption of iron by the small intestine. The common form of goitrous cretinism is due to a maternal deficiency of iodine, but in some cases this disease arises because of a deficiency in the foetus of a single enzyme—a dehalogenase—or due to a failure to organically bind iodine.

Much research in genetics is concerned with inherited biochemical disturbances and one valuable by-product of this has been the development of treatment of some of these diseases. If infants who are found to be suffering from phenylketonuria are maintained on a diet containing 15—20 mg/kg/day of phenylalanine (other dietary amino acids being given in usual amounts) it is possible that the subsequent development of mental deficiency may be prevented. The disease is due to a lack of L-phenylalanine hydroxylase (liver labile fraction) and mental deficiency is said to occur because the brain is poisoned by an excess of phenylalanine. Similarly, if galactosaemia is diagnosed early in life and galactose is removed from the diet then liver damage, jaundice, cataracts, mental deficiency, failure to thrive and defects in renal function can all be prevented. This disease is also due to the lack of a single enzyme—in this case galactose—1—phosphate uridyl transferase.

The fertilised ovum may be abnormal for other than genetic reasons. For instance, it has been shown that maldevelopment of the foetus may occur if the ovum has been in an unfavourable environment before fertilisation (Brachet, 1958).

Abnormal Environment

(a) Maternal

Exogenous Factors

(i) *Drugs:* Even though many drugs given during pregnancy have been suspected of producing congenital abnormalities, only a handful have been proved to be teratogenic in man. The administration of

sex hormones to pregnant women has resulted in abnormalities of sexual development, the most striking example of this being female pseudohermaphroditism following treatment with progestogens. Antimetabolites such as 6-mercaptopurine, aminopterin and amethopterin have produced severe generalised abnormalities and nitrogen mustard therapy may give rise to retinoblastomas. Renal agenesis has been observed when quinine was taken in early pregnancy. Large doses of vitamins E and K given to women in late pregnancy may result in severe jaundice in the offspring during the first few days of life, but as the jaundice is not present at birth this may not be considered as a congenital abnormality. The sedative thalidomide given in early pregnancy has resulted in multiple abnormalities in the foetus—these include phocomelia, amelia, hemimelia, rudimentary scapulae, imperforate anus, intestinal stenosis, choanal atresia, congenital heart disease, dysplasia of the external ear, and abnormalities of the urinary system.

(ii) *Irradiation.* This may produce malformations in two ways: mutations in germ cells of the parents may be induced or the radiation may have a direct teratogenic effect on the developing foetus—in Hiroshima and Nagasaki, for instance, there was an increased incidence of anencephaly after the atomic explosions.

(iii) *Infections.* In 1941 an Australian ophthalmogolist called Gregg noticed that of 78 consecutive infants with congenital cataract there was a history of maternal rubella during the early weeks of pregnancy in 67. Since that time rubella in the first trimester has been found to lead to patent ductus arteriosus, heart septal defects, microphthalmia, deafness (due to nuclear damage), mental deficiency and microcephaly. The incidence of subsequent malformations has been estimated (in Australia) to be 17—20 per cent when infection occurs in the first 12 weeks of pregnancy.

A primary infection of a pregnant woman by the protozoon toxoplasma gondi may result in intracranial calcification, hydrocephalus, microcephalus, chroroiditis or microphthalmia. In the first week of life there may be, in addition, jaundice, purpura and an enlarged liver and spleen. Jaundice and enlargement of the liver and spleen from birth may also be the result of other infections acquired in the uterus—these include syphilis and cytomegalic inclusion body disease.

(iv) *Anoxia.* Maternal anoxia may produce abnormalities in the foetus and in one instance attempted suicide with carbon monoxide during pregnancy was followed by the child being born with severe brain damage.

(v) *Nutrition.* It has been observed that the incidence of congenital heart disease and other malformations is increased following pregnancies in which there were vitamin and other deficiencies.

In the majority of cases these extrinsic agents have operated during the first 12 weeks of life when malformations have resulted. After this time primary organogenesis has been completed and the foetus is in a less vulnerable state to teratogenic agents.

Endogenous Factors

Alterations in maternal metabolism profoundly affect the foetus and in some cases could play a part in the production of congenital abnormalities. The evidence of this is scanty, but maternal diabetes is often associated with hypertrophy of the islets of Langerhans in the child at birth and is probably associated with an increased incidence of malformations (which include ventricular septal defect, abnormalities of the skeleton, encephalocele, hydrocephalus, polycystic kidney and agenesis of the kidneys). Maternal estrogens may lead to hyperplasia of the breast, prostrate or uterus in the child. Hyperthyroidism is occasionally associated with exophthalmos in the offspring at the time of delivery. Skull deformities, optic atrophy and mental deficiency have followed hypoglycemia during pregnancy. Children born of women suffering from myasthenia gravis may have temporary myasthenia in the first few days of life.

(b) Foetal

Endogenous Factors

Metabolic abnormalities arising in the foetus may result in congenital abnormalities. Tumours or hyperplasia of the adrenal cortex in female foetuses, for example, may result in pseudohermaphroditism. This presumably arises because of the excessive secretion of hormones by the increased mass of adrenal cortical tissue. Other malformations due to abnormalities of hormone secretions are recognised: hypoplasia of the adrenal glands occurs in anencephaly and cyclopia. In these two conditions the pituitary gland is malformed and it is thought that the adreno-corticotrophic hormone is not secreted. This substance (or a related hormone produced during foetal life) is necessary for the normal development of the adrenal cortex. Hypoplasia of the adrenal glands has been induced in laboratory animals by decapitation of the foetuses in utero. Some cases of hereditary dwarfism may arise because of pituitary failure, and an abnormality of development of the thyroid gland is the cause of one form of sporadic congenital cretinism.

Non-endocrine disorders in the foetus can also produce malformations. Failure of the heart to develop kills the foetus at an early stage unless it is parasitic on a twin. Other defects of the heart may be associated with abnormalities of the spleen, digits and palate. Although these could be produced because of circulatory disturbances it is equally likely these occur for the same reason that the heart is malformed. Local circulatory disturbances have been suggested as the primary anatomical cause of failure of tubular structures to close in the foetus (resulting for example, in anencephaly, spina bifida and facial clefts).

(c) Mother versus Foetus

Some malformations occur because of an abnormality in the relationship between mother and foetus. Haemolytic disease is an example of this. If antibodies against foetal red cells develop in the mother and these enter the foetal circulation then a haemolytic

anaemia will develop. As a compensatory reaction to the anaemia, hyperplasia of blood forming tissues in the bone marrow, spleen, liver, lymph nodes, kidneys and adrenal glands may occur. If the anaemia is very severe then heart failure can result and this in turn leads to oedema of tissues, ascities, and pleural and pericardial effusions. Some paediatricians believe that talipes, congenital scoliosis, malposition of digits and congenital torticollis are due to excessive pressure on the foetus by the uterine wall.

Animal Experiments

Without work on laboratory animals little would be known about the morphology and mechanisms of normal and abnormal development. The short gestation period of many animals also enables genetic studies to be carried out in several months which would take many hundreds of years of observation on humans, even if mating could be limited to individuals of known genetic constitution.

One important reason for doing animal experiments in any type of medical problem is the ability to control the environment of the organism. In investigating the problem of congenital abnormalities suspected clinical correlations can be tested. For example, the maternal administration of numerous substances; including anti-mitotic agents, radioactive isotopes, anti-vitamins, excess of vitamins, insulin, cortisone and dyes, exposure to anoxia, irradiation and changes in pH during gestation have resulted in malformations in the offspring. Animal experiments are also used to test new drugs for possible teratogenic effects. However, some abnormalities cannot be produced in animals (such as Down's syndrome) and there may be foetal variations in susceptibility to drugs in different species. About this difficulty Mary J. Seller (1962) has written: ". . . the only way to investigate this type of danger in a new drug would be to administer it to pregnant women. This is clearly impossible. Consequently the most satisfactory method at the present time, and in the light of the thalidomide experience, of dealing with drugs with an unknown effect on the pregnant woman, would appear to be not to administer them except if absolutely life saving".

REFERENCES

BRACHET, J. (1958). Biochemical Cytology. Academic Press Inc., New York.

SELLER, Mary J. (1962). *Lancet*, **ii**, 249.

TJIO, J. H. and LEVAN, A. (1956). *Hereditas, Lund*, **42**, 1.

WILLIS, R. (1958), *The Borderland of Embryology and Pathology*. Butterworth & Co. Ltd., London.

The next article in this series will discuss *"The Determination of Sex"* and will appear in our next issue.

Treating the Elderly

by G. F. STAMP,

Consultant Physician, Department of Geriatrics, Orpington and Sevenoaks Group of Hospitals.

The need for geriatric units, designed specifically to treat the elderly sick and to deal with the problems peculiar to this group of patients, is now well established. Few who have not had experience in such units, however, are conversant with the type of work which is being done and with the way in which these units are organised.

The following account is based upon the author's experience in forming and running the geriatric unit at Orpington Hospital which, since late 1950, has been evolved from the previously existing "chronic sick" wards.

The Assessment of Patients for Admission

It is usual in hospital practice for a patient's eligibility and priority for admission to be assessed by some means or another. This is usually done by discussion with the general practitioner on the telephone, as a result of which the patient may be accepted as an emergency, by a domiciliary consultation, or by the patient's attending an out-patient clinic. In geriatrics, the first two methods operate in the usual ways, but the process of seeing new patients at a clinic is usually replaced partly, and often wholly, by a system by which the patient is seen at home. In these cases, the general practitioner states that he considers the patient to be in need of admission to the unit and asks the geriatrician to see him at home in order to establish his priority on the waiting list in relation to the other patients on the list. In assessing this priority, both clinical and social factors need to be considered and it is for this reason that a home visit is of infinitely more value than an out-patient attendance. As an example, one may quote the two extremes of a patient who has sustained a coronary thrombosis and is being cared for by a devoted and able family in a convenient modern house, and one who has long been bedfast with an irremediable hemiphlegia in a country cottage, nursed by an elderly wife who has suddenly been taken ill. To decide which of these two should have priority for admission to one vacant bed is a matter of considerable difficulty. It will be apparent that some scheme of priorities must operate; the alternative, which would be to admit patients in chronological order, would lead rapidly to the blocking of beds by long-stay patients and, consequently, to a fatal length of waiting for treatable and acutely ill patients.

In practice, home visiting has a much wider value than the mere assessment of priority. A careful appraisal of the patient's clinical condition and social circumstances may reveal that he can be treated at home with the general practitioner's co-operation, if the geriatric unit almoner arranges suitable social support in the home such as home helps, meals-on-wheels and the provision of nursing aids on

loan from the Red Cross or a similar organisation. For this reason, many geriatricians take their almoners on home visits and to do so has the further advantage that if the patient is placed on the waiting list the almoner may be able to arrange help in the home during the period of waiting. Also, the knowledge she gains at this time of the home and relatives is invaluable later when arranging the patient's discharge after treatment in the unit, both in enabling her to arrange appropriate help in the home and, in necessary cases, to overcome the relatives' arguments against the patient's discharge. The geriatrician, too, is given an invaluable opportunity of discussing the whole problem of the patient's illness with the relatives, of explaining the part the geriatric unit can play in helping to overcome this problem, and of correcting the widespread misconceptions regarding the work of the unit. A still common misconception is that patients are retained in geriatric units automatically for the rest of their lives, and it is important to disillusion the relatives on this point at the earliest opportunity. In fairness, it should be said that most relatives are only too willing to have the patient home again, and in other cases a reluctance to do so is often due to a failure to realise how greatly the patient has improved. In instances of the latter type, it is often most valuable to arrange for the responsible relative to come to the unit and see the patient walking, dressing, cooking, and doing all the other things of which she had been incapable before admission. This usually creates a complete change of attitude and wins the necessary degree of co-operation.

Occasionally, of course, it is clear at the time of the home visit that the patient will need to remain in the unit indefinitely. For example, an elderly lady who is clearly a long-term nursing problem and who has only her husband to look after her will not be able to go home again and, in such a case, it is only kind to assure the husband that his wife will be able to remain in the hospital for as long as is necessary and that he need have no further anxiety about her future care. In some cases, it is necessary to actively persuade the old couple that this arrangement is in the best interests of both of them for, naturally, they are reluctant to part indefinitely. They must be reassured, too, that should circumstances change in the future so that the patient can go home, the hospital will be only too pleased to co-operate in facilitating her discharge, in arranging help at home and, if necessary, re-admitting her later should this prove to be necessary. Many elderly people fear that they will incur the hospital's displeasure if they ask for discharge and they must be assured that, on the contrary, they will be helped in every way and that the unit will "back" them to the best of its ability at all times. In some cases of this type, it is found that the relatives are only willing to nurse the patient at home provided that they can look forward to regular periods of relief, and then it is valuable to arrange admission for definite periods at regular intervals. For example, the patient may spend one month out of every four in the unit.

Finally, home visiting has the value of avoiding the unnecessary admission of old people to hospital. It is not uncommon for an old

person to be referred to the unit, not because he is in need of treatment or nursing, but because he is too frail to look after himself at home. Such an old person should be referred to the district officer who may arrange his admission to a home for old people, or provide various forms of help which will enable him to remain in his own home. The criteria for admission to a geriatric unit fall quite clearly into two categories: (a) as in all age groups, the need for investigation or treatment which cannot be carried out at home, and (b) the need for a degree of nursing care which is not available at home.

The Admission Wards

Basically, a geriatric unit consists of two parts, the admission wards and the long-stay wards.

All new patients are taken into the admission wards in the first instance, including those taken over from other hospital departments and those who appear from the beginning to be in need of long-term hospital care. Each patient is submitted to the same careful examination and investigation as would take place on an acute medical ward, and it may be stated here that only the highest standard of medical and nursing care is adequate in the effective practice of geriatrics. The reason why many elderly patients do badly in hospital is that they do not receive this standard of care. It is one of the characteristics of geriatric patients that multiple pathology is the rule, and it is universal geriatric experience that only by the energetic treatment of all the conditions from which each patient suffers may he be returned to the best possible condition of physical and mental health. In addition to specific medical treatment, the majority of patients are found to require some degree of physical rehabilitation and this is discussed below.

What sort of patients are admitted to geriatric units? There may be an impression that they are largely confused, incontinent and untreatable old people who would otherwise block beds in acute departments. If the situation is viewed solely from the pinnacle of the acute ward, this impression is not unnatural because the main body of patients, those admitted directly from their own homes, will not be seen. Certainly, many are confused and incontinent when first referred to the unit because confusion and incontinence are common symptoms of organic disease in the elderly. On the other hand, they are far from untreatable and the clearing of mental confusion and the restoration of continence with the effective treatment of the underlying lesions are everyday geriatric experiences. There is not the scope in this paper to discuss the various conditions treated, but there are few medical conditions to which the elderly are not subject and which may not, therefore, be seen in geriatric wards.

Rehabilitation

As has been mentioned, a high proportion of elderly patients require rehabilitation after an illness, whatever its nature. The general muscular weakness which follows even partial confinement to bed in a

young patient is surprising. In old people, it is much more severe and it is common to find that their legs literally will not support them after quite a short period in bed. In addition, they appear to lose the knowledge of how to walk, of how to place one foot before the other. Other disabilities frequently accompany this, e.g., diminution in or loss of ability to dress and wash, and even to feed themselves.

This deterioration must be reduced to a minimum by encouraging the patient to do as much for himself as possible, commensurate with his illness, from the very beginning. It is not unusual to find that an elderly patient is being fed when he is well able to feed himself, and to see him being lifted gently out of bed by two nurses when he could

manage to get out with some effort on his own part and the help of one nurse. While such actions on the part of the nurses are motivated entirely by kindness and from this point of view are commendable, the results may be catastrophic so far as the patient's ultimate recovery of independence is concerned. In the author's opinion, it is as regrettable for a patient to lose his independence through inadequate treatment as it is for him to die for the same reason. It is of fundamental importance that the patient be allowed and encouraged to sit out of bed as soon as possible, and this is sooner than one might expect. All but the most severe cases of pneumonia in old people can sit out of bed by the third day of antibiotic treatment, patients with congestive heart failure can almost always sit out for a time each day, and those with hemiplegias should do so as soon as they are able to support themselves in their chairs. It can be very difficult to decide when an

elderly patient can first sit out and, if one is in doubt, it is usually safe to allow him to do so. So important is this matter that probably one of the most frequent questions asked by the geriatrician of his house officers and ward sisters is "Is he getting up?" As the patient's condition improves, activities such as dressing, washing and walking must be increased as quickly as possible.

It is not the intention in this paper to even touch upon the treatment of such specific physical conditions as hemiplegia and the arthritides, but no account of geriatric treatment could omit to stress the importance of the general rehabilitation of the elderly. It will be seen that this is not purely the province of the physiotherapist and occupational therapist, but that it is the concern of everyone who has to do with the patient throughout the whole of his stay in hospital. This is not to imply that the physiotherapist and occupational therapist have not important rôles to play in the treatment of these patients. They are, of course, quite indispensable and ideally they should treat every geriatric patient from the day of admisison to hospital. In practice, however, shortage of staff renders this impossible and usually these forms of treatment cannot be introduced until the patient has been sitting up in the ward for some time and has at least started to walk with the aid of the nursing staff. When the patient does start these forms of treatment, there is a great deal to be said for them taking place away from the ward and, if there is one, in the day centre. The patient is thus removed each day from the atmosphere of the ward to one of greater activity, from the sight and sound of ill people to the company of those who are optimistically resuming an active life. In this way he will meet and talk to patients who have recovered sufficiently to have been discharged from in-patient care, and he will be encouraged to work towards the day when he, too, will be able to go home.

Discharge of Patients from the Unit

There is a widespread belief that the discharge of an elderly patient from hospital will necessarily be difficult, and that each one is a potential "bed blocker". Although this difficulty is not as common as might be expected, it does apply to many cases and it follows that an active and effective geriatric unit must evolve a technique for overcoming the difficulties involved. Some patients who have good homes and who have made good recoveries can be discharged without any difficulty whatsoever, but in the majority, discharge from hospital needs to be a carefully planned procedure. There are several reasons for this. Often, there were social defects before the patient was admitted, and these may have contributed to his illness. Clearly, it would be wrong to send such a patient home without, at the same time, eliminating these defects. In other cases, the patient may have recovered sufficiently to leave the hospital but may have some residual disability which renders him incapable of coping with his home circumstances as they were before. Sometimes, the relatives with whom the patient had lived are reluctant to undertake his care again. Occasionally, his home was so unsuitable to his needs that he has to be advised to apply for admission to a home for

old people and he may then be able to go home for a time and await a vacancy or, in extreme cases, he may have to remain in hospital until a vacancy can be found for him.

For these reasons, an efficient and energetic almoner is indispensable to a geriatric unit. She should take part in a weekly case conference held on each admission ward, and this must include the ward sister and all members of the unit medical staff. The almoner will usually start to plan a patient's discharge a week or more before he is expected to be fit to go so that, when he is fit, no delay will be created by social difficulties. The importance of this is, not only the avoidance of wastage of beds, but that elderly patients quickly become discouraged by a delay in discharge once they have become well enough to go home. This is understandable when one realises that many have a basic fear that they will never become well enough to leave hospital and that, if they do, they will be incapable of leading a satisfactory life at home. If they find that, having become well enough, they are still unable to go because of social difficulties, they quickly lapse into a state of apathy and disinterest.

Many patients require continued clinical supervision for a time after discharge and will, therefore, attend an out-patient clinic. These include particularly those with myocardial ischaemia, chronic respiratory disease, diabetes, peptic ulceration, and the various types of anaemia encountered so frequently in geriatrics.

In spite of careful planning by the almoner, a patient's ability to manage at home sometimes remains in doubt. In these cases, the almoner visits the patient at home shortly after discharge to see how he is getting on, and is thus enabled to reinforce the social support if she detects any evidence of impending breakdown.

Day Centres

Day centres (or "Day Hospitals"), which may be specially designed buildings or adapted wards attached to the geriatric unit, can play an important part in facilitating the discharge of elderly patients and in maintaining them at a maximal state of physical and mental health after they have returned home. Suitable patients spend the day at the centre, returning to their homes at tea-time, the necessary transport being provided by either the ambulance service or one of the voluntary organisations. During the day, they are given morning coffee, a mid-day meal and afternoon tea. Part of the time is devoted to physiotherapy and occupational therapy, and there are periods for entertainment, discussion, and relaxation. Medical treatment such as injections of vitamin B12, changes of catheter, and the dressing of ulcerated legs may be carried out. In appropriate cases, a hot bath can be given. The number of days per week upon which each patient attends depends upon the individual case and, as his condition improves the frequency of attendance is gradually diminished.

When space permits, it is useful for in-patients who are undergoing rehabilitation to spend their days in the day centre, returning to their wards in the evening. In this way they are weaned from the ward atmosphere and have the stimulus of meeting those who are

attending from their own homes. The day centre at Orpington Hospital is essentially a part of the Department of Physical Medicine and, by the courtesy of its director, Dr. Michael Fearnley, and the superintendent physiotherapist, Miss M. G. Blundy, produces excellent results in the rehabilitation of the geriatric in-patients.

The Long-Stay Wards

Some geriatric patients suffer from conditions which, by their nature, necessitate permanent nursing care. Some of these have relatives who are both able and willing to nurse them at home, while others are financially able to go to nursing homes. The majority, however, have to remain in the geriatric unit indefinitely and they are transferred from the admission wards to the long-stay wards as vacancies occur in the latter. In an active unit serving an area in which the general practitioners have long been accustomed to referring their elderly patients before they become untreatable, the proportion falling into the "long-stay" category is quite small.

It cannot be emphasised too strongly that a long-stay ward is a patient's home, usually for the rest of his life, and the traditional routine and organisation of a hospital ward is not altogether suited to this type of patient. It must be emphasised, too, that these patients are very much at the mercy of those who have to care for them and that they are not in a very strong position to complain if all is not as well as it should be. The qualities of the ward sister and her staff need to be somewhat different from those of their colleagues on the admission wards. In both cases, basic nursing must be of a high standard but while the admission ward staff must be conversant with modern therapy and also be capable of firm but kind rehabilitation, the staff of the long-stay ward must get to know their patients more intimately and should create, so far as is possible, a homely and interesting environment. There is a place for both group activities and for individual hobbies and occupation. But the latter must not be carried too far, to the point of forcing patients to do things which they dislike, or life in a long-stay ward may be torture. The decor of these wards might, with advantage, be rendered more like that of a home than of a hospital ward.

The medical care of long-stay patients is one of the aspects of geriatrics which many doctors find unattractive in anticipation. Few find it so in practice. If general medical and geriatric admission wards provide a challenge to one's diagnostic ability, then long-stay wards provide an equal challenge to one's therapeutic ingenuity. In addition, one has to be constantly on the alert for the development of acute complications in these patients. They, no less than the population at large, are prone to develop pneumonia, heart failure, coronary artery disease, cerebro-vascular lesions, various forms of anaemia, and lesions of the alimentary tract. Also, the clinical conditions which render these patients permanently in need of hospital care are ones which repay study both by those who are working for higher examinations and those who are interested in the exercise of original thought. It is salutory to reflect that these patients constitute the end results of modern medical skill.

Physiotherapy in Geriatrics

by ELIZABETH R. TANNER
Chartered Physiotherapist, Guy's Hospital

It must be remembered that all work in the geriatric field is team work. It is not in the interests of the patient that there should be "demarcation disputes" as to which of the doctor's orders shall be carried out by the physiotherapist, which by the nurse, which by the occupational therapist; obviously, some of the activities mentioned here will be carried out by whichever member of the team can most conveniently do it, others call for special skills which are not shared by all the members.

It is convenient to consider the work of the physiotherapist in geriatrics under two headings; firstly, the planning of rehabilitation for patients in later middle life with the special aim of avoiding, or at least postponing, limitations of activitity, and secondly, the re-establishment of maximum independence in those patients who are already housebound, or even bedfast.

a) Rehabilitation of the older patient

The planning of rehabilitation for the older patient after accident or illness must differ from the planning for the younger age groups. Chronological age may be misleading, and special attention must be paid to physique, occupation, hobbies, and mental alertness rather than to the date of birth.

The older patient may be given a good deal of ill-informed, and often conflicting advice from friends, and may either fail to reach the degree of activity posible for him, or, on the other hand may risk further accident, or a recurrence of illness. He can be helped by clear instructions from a physiotherapist if rehabilitation has been prescribed, and his treatment will often include trying out, under supervision, such activities as lifting suitable weights, mounting household steps or reaching for objects above his head.

An elderly man who has been a carpenter or builder will have developed a good sense of balance, and may well be able to go up a ladder quite safely, and carry out work above his head, once he appreciates the limitation of movement an injury has caused. Another man, however, may never have developed much skill in maintaining the centre of gravity within a small base, and be quite unable to adjust to the extra difficulty in balancing which is caused by comparatively slight joint limitation or muscular insufficiency in the trunk or lower limbs.

In later life a patient is more likely to acquire disorders of gait or posture after illness or injury, and unless he realises their presence, and is shown how to overcome them, they will gradually increase, causing unnecessary limitation of activity, and possibly leading to further illness. The patient who has been using the accessory muscles of respiration during an attack of bronchitis may continue to do so, gradually losing the sense of proper thoracic movement, while the patient who is allowed to limp, uncorrected, after a leg injury will form a habit of limping.

There are of course many cases in which advancing years make it impossible for the patient to approach his former degree of functional efficiency, but there are many others in which he only needs assessment, instruction, and encouragement in order to gain a far better result than he could have achieved by himself.

b) Re-establishment of maximum independence

The aim of treatment here is to remove as many obstacles to self-care as possible, and, in gaining the co-operation of the patient, the almoner and the social worker play a large part in providing the incentive.

It is often surprising to discover how much inability to cope with daily living may be due to a habitual series of movements becoming less satisfactory as physical strength diminishes. A patient who habitually stands on one foot while drying the other may be worried by increasing unsteadiness, yet may not think of sitting down to it.

The essential activities such as washing, eating, drinking and dressing often present great difficulties, and these patients are helped very much by the special "aids" which are the particular province of the occupational therapy department, and make it possible for the patient to gain a very great measure of independence.

The sequence of contraction in muscle groups may have become disordered in a case where there has been little activity for some time; there may be failure to stabilise the trunk before attempting to use the limbs, or, to stabilise or support proximal joints before attempting accurate movements with the hands or feet. Old people also need encouragement to concentrate on the stimuli reaching them through tactile or proprioceptive sources, as the senses are necessarily blunted and more attention is needed to obtain co-ordination of movement.

Probably incontinence is one of the greatest social disabilities in age, and may be present in a mild form for many years before the patient mentions it to the doctor; it would appear that slight difficulty in holding the water is accepted by many women as a natural phenomenon, and that no attempt is made to obtain treatment until it is imposible to conceal the disability. In suitable cases a considerable increase of sphincter control can be achieved by stimulation of the levator ani with faradic current by means of a rectal electrode; this impresses on the patient the degree of contraction that is possible in the pelvic floor muscles, and encourages her to attempt to carry out contractions herself, at first helped by the current, and later without it.

Correction of posture in lying, sitting and standing is of great importance both for physical and mental well-being of the patient and can be encouraged, with simple rhythmical movements, by a gramophone record. The selection of the music is of some importance, as a familiar tune will be a better stimulant to activity than an unfamiliar one and also group activity may arouse some sense of competition.

Physiotherapy in connection with geriatrics gives a good deal of opportunity for original thought, and is by no means directed to those in a "second childishness, and mere oblivion, sans teeth, sans eyes, sans taste, sans everything."

CRITICISM

United Hospitals Orchestra - 7th May
London Medical Orchestra - 31st May

Photograph *Simon Wood*

Sir Adrian Boult with Hephzibah Menuhin and the London Medical Orches tra

These orchestras were formed within a year or two of each other, the London Medical Orchestra (LMO) ten years ago and the United Hospitals Orchestra (UHO) about nine years ago. Whereas the latter is composed mainly of students and the younger members of the London Teaching Hospitals, the LMO is made up of the older and more distinguished members (except for a very healthy looking brass section).

After a somewhat shaky beginning the UHO settled down and by the end of the first piece, Schubert's Overture in D, had gained their second wind and were getting into their stride. Mr. Gervase de Peyer was the soloist in Weber's 2nd Clarinet Concerto and his performance was as one would have expected from a player of his calibre. His tone control was superb from the smoother lower notes to the clear tones in the clarinet's upper registers. The last movement, marked *alla polacca,* was lively and syncopated and Mr. de Peyer's fingers writhing up and down his instrument, produced some splendid music.

The Serenade for Wind Instruments, by Richard Strauss, was particularly adventurous because it is a difficult piece to play and retain any sense

of continuity. The wind section managed this except in a few places where the continuity lapsed.

The last item was Beethoven's 8th Symphony and Mr. Geoffrey Corbett set a rattling pace which was continued throughout the work. The strings were notably prominent and impressed one with their playing throughout the concert with the high standard they achieved.

The LMO concert was on a grander scale and was performed in the Central Hall, Westminster (the UHO were at St. Paul's, Kightsbridge). They were fortunate in having Sir Adrian Boult as a guest conductor and Miss Hephzibah Menuhin as the soloist in the 4th Beethoven Piano Concerto. The concert began in a most assured fashion with the Overture to Le Carnival Romain, by Berlioz, the playing was exciting and augured well for the rest of the concert. Sir Adrian's tempi for the Beethoven were very steady and he was in full control of the orchestra. One of the most noticeable features was the manner in which Miss Menuhin kept completely in time with the orchestra seemingly watching Sir Adrian's beat more than the piano keyboard. Her playing was impressive for its firmness and sensitivity but there are no real moments which are immediately recollected as in Mr. de Peyer's playing in the UHO concert. The orchestra ably supported Miss Menuhin and the wood-wind were prominent playing some beautiful passages.

It was obvious that the brass section had been waiting for Dvorak's 4th Symphony and now they really had fun playing in an uninhibited and stimulating manner. This piece was conducted by Mr. Frederick Marshall, the present conductor since 1959 who, despite some noisy directions, managed to get the best out of the orchestra. One of the differences between these two concerts was the assured percussion of the LMO—one can hardly remember the timpani in the UH concert—but here, especially in the Dvorak, they were very noticeable. The string playing in both concerts was good but the LMO seemed to have the better of the musicians generally and their concert was more enjoyable, although this may in part have been due to the selection of works chosen by the two orchestras.

MATTHEW LEWIS

Guy's Hospital Music Club Concert—28th May

Janet Tuke—Violin, Freda Owens—Piano. Brian Etheridge—Bass, Robert Sells—Accompanist

Programme :

Sonata for Violin and Piano in A . . . Vivaldi

Three Songs.

Now Phoebus Sinketh in the West . . . . Arne

Music for a While . . . . . Purcell

The Owl is Abroad . . . . . Purcell

Partita No. 2 in D minor for Violin . . Bach

Three Songs.

Go Not Happy Day . . . . . Bridge

The Birds . . . . . Britten

Oliver Cromwell . . . . . Britten

Sonata for Violin and Piano in A, K526 Mozart

A most interesting and varied programme was provided by Miss Tuke, Miss Owens, Mr. Etheridge and Mr. Sells for their recital in the Quiet Games

Room on May 28th, and a gratifyingly large and appreciative audience was present to receive them.

Perhaps the outstanding offering from Miss Tuke and Miss Owens was the Mozart Sonata. It was in this that violinist and pianist were most at home, particularly Miss Owens, whose fleet fingers and agile mind were admirably suited to this piece. The phrases were delightfully shaped and coloured, particularly in the outer movements and the work as a whole was well conceived and finished. Miss Tuke also, was nicely in sympathy with the composer and gave a sprightly, polished performance.

Bach is a difficult composer—both in technique and interpretation he is very demanding and the D minor Partita is fraught with hazards. Miss Tuke made a brave attempt to conquer this piece without ever quite succeeding.

The Vivaldi Sonata which opened the programme was technically well-performed but rather lacked variety, particularly in tone, and one felt that much would have been added to their piece by more marked dynamic contrasts.

The programme was completed by two groups of songs, sung by Mr Brian Etheridge. His rich, mellow voice, fine production and control, were wholly endearing, and in Dr. Robert Sells he had a proficient and sensitive accompanist, who managed the fiendish "Go not Happy Day", expertly. The penultimate song, "The Birds", was outstanding, and found the soloist and accompanist in complete and very satisfying harmony.

RICHARD STRICKLAND

CORRESPONDENCE

Guy's Hospital Reports

SIR, May I have your co-operation in bringing to the attention of those Guy's Men who, during the last 30 years have contributed articles to Guy's Hospital Reports, the position which has arisen regarding the blocks used to illustrate such articles? These blocks have been allowed to accumulate at the printer's and there is now an embarrassingly large number and some fresh arrangements will have to be made. Few of the blocks have ever been used more than once and, with modern methods of reproduction, no useful purpose seems to be served by storing them. These blocks are the property of the Board of Management, but before ordering their destruction, the Board wishes to invite any author, who would like to have the blocks illustrating his article, to apply for them.

The Board of Management has thus made two decisions: (a) that in future a block will only be preserved for three years, after which it will be offered to the author; and (b) that all existing blocks used to illustrate articles published before 1961 should be destroyed unless a request for their preservation is received from the author before 31st July, 1963.

Administrative resources of the Reports do not permit efforts to communicate individually with every surviving author of papers published between 1928 and 1961, and it is hoped that the publication of this letter and a similar statement in the Reports will enable any author who would like to have the blocks illustrating his article, to write to me before 31st July, 1963.

Yours, etc.,

G. E. H. FOXON,
Hon. Treasurer,
Guy's Hospital Reports.

Clinico-Pathological Correlation

SIR, Most students would agree, I think, that the facts that are really well remembered and understood are those which are linked to concrete objects or to patients whom they have looked after. For the most part, this association is only really taken advantage of in the teaching of medicine and surgery at the bedside, and I would like to suggest a number of possible ways in which pathology could be integrated into this system apart from the autopsy demonstrations.

(i) Histological sections from biopsy and operation material or blood smears might be duplicated so that a slide of each lesion is kept with the notes of the patient. The histological report might then be written with the purpose of teaching as well as giving a diagnosis. Ideally there should be a microscope in all surgical wards for this purpose.

(ii) The Gordon Museum provides an example of this type of correlation by always giving a brief history with specimens. A comparable selection of cases with histological slides would, one realises, demand a great deal of work, but a selection of 2-300 representative cases might perhaps be made from the autopsy records and kept in a place where they are available to students preferably in the Museum. The idea is not to supplant the Wednesday special pathology demonstrations, but to provide revision material on any subject that is required at the time.

(iii) With the first suggestion, the need might well be found for a pathologist to conduct a " round " a few times during the surgical or gynaecological appointment to review interesting cases that have been in the ward since the last round.

This letter is not intended to be a criticism of any single part of the clinical course, but in the hope that a system might be evolved where one's knowledge of pathology extends beyond two or three books and the "standard" collection of slides.

Yours, etc.,

B. G. R. NEVILLE.

Guy's Hospital.

SIR, Your contributor's account of " A Complication of a Christmas Party" reminds us that it is not uncommon for a patient to come to hospital with a history of suspected inhalation of a foreign body, and that delay in diagnosis can have serious consequences.

Radiological examination in the first few days is usually negative in these cases, but it is not universally known that valuable assistance can often be obtained by exposing two films in succession in identical postero-anterior position, one in full inspiration and the other in full expiration.

Critical comparison of these two films may reveal a slight lack of deflation of one of the lower lobes on expiration which is most suggestive of an obstructive emphysema and worth following by bronchoscopy. In these circumstances I have seldom known a foreign body not to be discovered.

Yours, etc.,

J. A. BROCKLEBANK.

X-ray Department, Ashford Hospital,
Middlesex.

SIR, Would you be so kind as to allow me space in your correspondence column?

I wish to thank all Guy's Men and Women who, so kindly and generously, contributed to the Testimonial Fund on my retirement from the Wills Library.

Recently, I was presented with a cheque by Dr. Maurice Campbell in the presence of members of The Wills Library Committee, and I am indeed most grateful to all those who so kindly thought of me on my departure from the Medical School.

With renewed thanks to all concerned.

Yours, etc.,

GEORGE A. R. WINSTON.

51, Mount Ephraim Road,
Streatham, S.W.16.

SPORT

Sports Day, 1963—Full House?

ATHLETICS

In their second match of the season, the Club met King's College at Honor Oak Park. The afternoon was pleasantly sunny to start with, but later a stiff breeze made conditions decidedly unpleasant. Once again the team displayed its strength in the shorter track events and the field events. Despite creditable performances by P. Witting and D. Cooper in the middle distance events, a weakness exists due to a shortage of athletes—and the club would welcome further competitors to support their efforts in the half, one and two mile events. Eventually a fairly comfortable win was achieved by 77 points to 62.

On Sports Day, D. Waters and A. Winskill fought a close battle for the Victor Ludorum Cup, which Waters eventually took in the last event by 29 points to 26. New records were set up in the 120 yards Hurdles by D. Waters, and P. Peace in the Discus and Hammer.

On Saturday, June 8th, D. Waters ran third to L. Taitt in the 120 yards Hurdles at Wolverhampton, when competing for the South in the Triangular match. R. Morris was prevented from performing for Great Britain against Benelux by a pulled muscle which had not responded to treatment.

CRICKET

The Club had an eventful Whitsun, enjoying a successful afternoon against Harefield Hospital, where Silk, Morris and Knott batted well, and Knott showing his all-round ability, captured 4 wickets to produce a win by 25 runs. Against Crofton Park, however, a winning position was scorned, and the visitors, 83—8 at lunch were permitted to reach 164. Guy's opening batting proved successful, but was badly supported by the tail, and the eleven went down by 38 runs.

Against Balcombe, Guy's batted as if to redeem their previous performance, and a handsome innings by Silk, well supported by Myall and Huins, enabled the side to declare at 228 for 2. Miller's bowling proved altogether too much for the home side, and Guy's ran out easy winners by 112 runs. It was gratifying again to see fine performances by newcomers Silk and Miller—which holds out great promise for the future.

Reports and Results

SPORTS DAY

Sports Day this year was held on Saturday, June 1st, and although many people were out of London for Whitsun, the glorious weather ensured a crowd comparable to previous years. The afternoon's activities included the usual athletic events and sideshows. A tetrathlon competition was held for the first time.

Conditions for athletics were almost ideal, the hot sun being moderated by a stiff breeze which was blowing straight down the 100 yds. track from start to finish. The ground was in beautiful condition. The standard of the athletics was quite high but the number of competitors left something to be desired, especially in the middle distance events. D. Waters won the shorter sprints with good times. In the 120 yards hurdles he beat the existing record by nearly one second with the excellent time of 14.9 secs. D. Cooper and P. Witting were given little competition in the middle distance event and shared the honours evenly between them. P. Peace dominated the throwing events, breaking both the discus and hammer records and recording a good distance in the shot putt. B. Hartley broke Peace's monopoly by winning the javelin with a throw which was a foot short of the record. The jumping events were evenly decided, R. Morris, still troubled by the pulled muscle which has been hampering him all season, won the high jump, D. Waters, the long jump, and A. Winskill the triple jump. By winning five events and coming second in two more, Waters once again displayed his versatility and won the Victor Ludorum for the fifth successive year with a total of 29 points. However, the result was in doubt right up to the last event, the high jump, in which Waters took second place to gain three points and put him ahead of Winskill, who had a total of 26.

The introduction of a tetrathlon competition, organised by the newly-formed pentathlon club, proved a great success. The seven competitors took part in shooting, swimming, fencing and running events.

Due to the lack of facilities at H.O.P., the shooting was held at the Polytechnic, Regent Street, beforehand, and .22 pistols were used at 25 yards.

The swimming took place at 9.30 in the morning at the Grange Road Baths, Bermondsey. This was a freestyle competition over 300 yards. Both the swimming and the running were timed trials, as opposed to individual racing

At 11.30 a.m., the fencing was begun at H.O.P., using the electric epée—75 per cent of possible victories giving 1,000 points—and points were allocated accordingly. A lunch break followed and this part of the competition was completed at 3 p.m.

For the cross-country event, two laps of the perimeter of H.O.P., and the road outside were run, covering a distance of about one and-a-half miles. A time of 8min. 30secs. was given 1,000 points and 5 points per second added or subtracted accordingly.

R. Thacker gained an early lead after the shooting but by the end of the swimming and fencing, S. Faithful held a marginal lead over B. Smith and P. Wren, and so the final result was dependent on the run. Smith ran well and just suceeded in gaing a very keenly contested victory over Faithful.

Added stimulants to the afternoon's enjoyment were the sideshows (run by the various clubs, the nurses and physiotherapists) and the novelty races. The beer race, ladies egg and spoon, mixed three-legged race, Cluos Union relay and the children's races all attracted a large number of competitors and provided some enjoyable light entertainment. Of the sideshows, the bingo, in the capable hands of Patrick Rowe, attracted considerable attention culminating in a session for consultants and senior members of the staff. The wind sent the hydrogen-filled balloons off to a good start and the members of the football club running their sideshow faced more penalties in one afternoon than they are likely to experience in the rest of their playing careers. Some members of the Physiotherapy Department successfully gave people electric shocks in exchange for an attempt to pick a shilling off the bottom of a bucket full of water, while the nurses tested the steadiness of people's hands in trying to hook bottles. As ever, more beer was spilt in the beer race than was drunk, and the tug-of-war teams repeatedly exceeded the regulation number. The Sports Day dance was held in the Student's Club in the evening.

The afternoon's proceedings were brought to a close by the prizegiving. John Hunt, the captain, gave a resumé of the club's activities this season before introducing Mrs. Blaikley, who kindly consented to give away the prizes. Mr. Tomkinson thanked Mrs. Blaikley and appealed for support for the club at the United Hospitals Championships, to be held on Saturday, 15th June at Motspur Park.

It would be impossible to thank individually all those who contributed so much to the organisation and running of Sports Day, but the club is indebted to all concerned for their help, without which the afternoon would not have been possible.

ANDREW WINSKILL

At H.O.P. 1st June, 1963

100 yds.
1st. D. Waters, 10secs.; 2nd. A. Winskill, 3rd. J. Domaigne.

220 yds
1st. D. Waters, 23secs.; 2nd. A. Winskill, 3rd. R. Morris.

440 yds.
1st. A. Winskill, 55.1secs.; 2nd. D. Waters, 3rd. D. Tong.

880 yds.
1st. D. Cooper, 2min. 7.0; 2nd. P. Witting, 3rd. A. Winskill.

1 Mile.
1st. D. Cooper, 4.56.0; 2nd. P. Witting.

2 Miles
1st. P. Witting, 10.54.4.; 2nd. D. Cooper, 3rd. C. Coffin

Junior 880 yds.
1st. P Witting 2.7.1; 2nd. A. Winskill, 3rd. D. Cooper.

4 x 110 yds. Relay.
Frigidares, 49.9; (Tong, Hunt, Winskill, Domaigne).

High Jump.
1st. R. Morris, 5ft. 10in.; 2nd D. Waters.

Long Jump.
1st. D. Waters, 20ft. 11in.; 2nd. J. Domaigne, 3rd. D. Morris.

Triple Jump.
1st. A. Winskill, 40ft. 2in.; 2nd. J. Domaigne, 3rd. R. Morris.

Shot.
1st. P. Peace, 42ft. 8in.; 2nd. D. Waters, 3rd. A. Winskill.

Javelin.
1st. B. Hartley, 168ft. 5in.; 2nd. A. Winskill, 3rd. P. Peace.
Discus.
1st. P. Peace, 135ft. 9in.*; 2nd. B. Hartley, 3rd. A. Edgar.
Hammer.
1st. P. Peace, 91ft. 5in.*; 2nd. B. Hartley.
120 yds. Hurdles
1st. D. Waters, 14.9secs.; 2nd. A. Winskill, 3rd. J. Domaigne.
* New Record.
Tetrathlon—Swimming, Shooting, Fencing, Running.
1st. B. D. O. Smith, 2nd. S. Faithfull, 3rd. P. Wren.

ATHLETICS

Match v. Kings' College

At H.O.P. 29th May, 1963
Result: Won 77—62.
Individual results:
100 yds.
1st. D. Waters, 10.2secs.; 2nd. A. Winskill.
220 yds.
2nd. A. Winskill, 24.4; 4th. R. Morris.
440 yds.
1st. A. Winskill, 53.0; 4th. R. Morris.
880 yds.
2nd. P. Witting, 2mins. 12.2; 3rd. D. Cooper
1 Mile.
3rd. P. Witting, 5mins. 5.9.
2 Miles.
3rd. D. Cooper, 11mins. 0.3.
4 x 110 yds. Relay
1st. Guy's, 48.2secs.
High Jump.
1st. R. Morris, 5ft. 8in.; 3rd. J. Domaigne.
Long Jump.
1st. D. Waters, 20ft. 7in.; 3rd. J. Domaigne.
Shot.
1st. P. Peace, 41ft. 3in.; 3rd. D. Osborne.
Javelin.
1st. B. Hartley, 174ft. 8in.; 3rd. A. Winskill
Discus.
1st. P. Peace, 130ft. 10in.; 2nd. D. Osborne.
120 yds. Hurdles
1st. A. Winskill. 16.2; 3rd. D. Waters.

CRICKET

1st XI v. HAREFIELD HOSPITAL

At Harefield. 2nd June, 1963
Guy's, 151. (D. Silk, 36; A. Morris, 32; N. Knott, 26).
Harefield Hospital, 126. (Knott, 4—21).
Result: Guy's won by 25 runs.

1st XI v. CROFTON PARK

At H.O.P. 3rd June, 1963
Crofton Park, 164 (D. Miller 4—41; M. Walter 3—40).
Guy's, 126. (H. MacGregor, 32; G. Hambleton, 33).
Result. Crofton Park won by 38 runs.

On a fine sunny morning, Crofton Park won the toss and elected to bat. A superb diving catch by Edgar, fielding at leg slip, from a very respectable leg-glance in Miller's first over, gave Guy's a good start. Steady, accurate bowling by Miller (4—41) and Walter (3—40) soon had the batsmen groping and at the lunch interval Guy's were in the very satisfactory position of having eight opposing batsmen out for 83 runs. The seemingly easy task of dismissing the last two batsmen for a meagre total proved to be too much, and sensible batting, assisted by dropped catches, enabled Crofton Park to retrieve themselves from a far from strong position.

The Guy's innings started badly, Silk being caught with the total at seven. MacGregor, with some powerful driving, and Myall then took the total to 46, when a misunderstanding resulted in the unnecessary run out of Myall. Hambleton and MacGregor then took command and two fine sixes by Hambleton had Guy's with their sights set on victory.

The bowlers then began to turn their attentions away from attacking the stumps in an attempt to stem the flow of runs. Several batsmen could not resist the temptation of "flashing outside the off-stump" and Crofton Park were again on top Apart from a few lusty blows by Davoodbuoy, the Guy's tail was unable to avoid a rather ignominious defeat by 38 runs.

NIGEL KNOTT

1st XI v. BALCOMBE

At Balcombe 8th June, 1963
Guy's 228—2 dec. *D. Silk, 114; R. Myall,* 58 n.o.; T. Huins, 36).
Balcombe, 116. (Miller, 4—8).
Result: Guy's won by 112 runs.

1st XI v. HAMPSTEAD

At Hampstead. 9th June, 1963

Guy's.	
D. B. Silk, b. Bailey	28
R. W. T. Myall, ct. Fothergill, b. Phillips	14
T. J. Huins, ct. Fellows, b. Bailey ..	2
G. Hambleton, b. Phillips	1
C. *Davoodbuoy, b. Bailey*	19
M. Joyce, ct. Fothergill, b. Phillips ..	16
J. Craft, b. Laurie	27
E. Price, run out	5
A. Edgar, b. Bailey	7
M. Walter, not out	16
N. J. Knott, b. Laurie	33
Extras	21
Total	184

Hampstead, 185 for 8. (A Edgar, 3 for 21; *C. Davoodbuoy, 3 for 37).*

Huins and Silk doggedly saw the shine off the ball before Huins was bowled. Silk now produced some fine cover drives before playing over one and being bowled. The remainder of the batting before lunch showed more concentration than shots. But concentration in the heat was difficult and the score slumped to 79 for 5. After lunch Craft and Price took a short single too many and Price was run out. Craft went on to make 27 useful runs. The last wicket put on 51, Walter not out 16, and Knott 33. Knott was punching the ball through the covers off the front and back foot before being bowled.

When Guy's took to the field the sky was overcast, but the rain kept off. Walter was not a little surprised at being hit for two fours through cover in the opening over. In the final stages he bowled very economically, giving away only eight runs in six overs. Knott's first over was threatening with the ball flying through the slips twice. Edgar and Davoodbuoy each took three wickets and took fine return catches. The other catch of note was made by Myall running round the long off boundary At 164 for 8, the game was still open, but slowly and surely the Guy's total was passed.

SAILING

The Club held their Annual Regatta at Burnham-on-Crouch using the facilities provided by United Hospitals Club, on Thursday and Friday, 23rd and 24th May. This also enabled those who were not members of United Hospitals to see that club in action over the week-end

The Guy's regatta consists of two days'

sailing—one of cruising, the other of racing—there being enough boats to ensure that everyone has the opportunity to sail. The regatta also permits all those who are interested, and able to take time off, to gather at the club when it is otherwise unoccupied.

Various types of boats are available for use—including seven 12-square metre Sharpies, which belong to United Hospitals, used for racing; six Fireflies, owned by various Hospitals, and kept at Burnham during the summer; and other larger craft, which this year included a Royal Burnham, one Design, and an East Coast One Design.

This year, Thursday was to have been devoted to cruising, but unfortunately the weather was so bad that it was deemed best to sail locally. By the evening 30 rather damp people had collected in the Anchor, and despite the weather, and spring tides, everyone had managed to sail.

Friday dawned a better day, and everyone was occupied sailing or racing. The racing was for the Ogilvie Cup and took the form of two heats and a final. Anyone who could prove to be reasonably competent, was entitled to enter, and there were twelve starters. The heats were sailed in the morning and the final, over a larger course, in the afternoon, was won, to the chagrin of the regulars, by John Hunt, who had not been to Burnham before. That evening, the glad-rags were brought out and the successful conclusion of yet another regatta was celebrated by 50 at a dinner in the Ship, presided over by our Commodore, Mr. C. H. Kinder, and at which Mrs. Kinder very kindly presented the Cup. The dinner was followed by a visit to the local river-front pub where, but for an extremely low tide, J. Hunt would have been treated to a dip in the Crouch.

Judging by the sudden increase in Guy's membership of United Hospitals Club after our regatta, many people did in fact enjoy themselves—so as everyone at Guy's is eligible, why don't you come next year?

TIM HARRISON

LADIES TENNIS

Guy's v. Goldsmiths, Wednesday, May 8th.
Anthea Sutton and Priscilla Heather, won 3, lost 0.
Ruth Williams and Brenda Gillian, lost 3, won 0.
Penny Heather and Janet Hock, won 3, lost 0.
Guy's won 6—3.

Guy's v. Girton, Camb. Saturday, May 18th.
Anthea Sutton and Priscilla Heather, won 3, lost 0.
Ruth Williams and Janet Hock, won 2, lost 1.
Hilary Barnes and Brenda Gillian, won 1, lost 3.
Guy's won 6—3.

Guy's v. Newnham Camb. Sunday, May 19th. won 3, lost 0.
Anthea Sutton and Priscilla Heather,
Ruth Williams and Janet Hock, won 3, lost 0.
Hilary Barnes and Brenda Gillian, won 1, lost 2.
Guy's won 7—2.

Guy's v. Middlesex Hospital. Saturday, May 25th.
Priscilla Heather and Ruth Williams, won 3, lost 0.
Clare Stevenson and Janet Hock, won 3, lost 0.
Penny Heather and Barbara Walton, won 3, lost 0.

Inter-hospital Cup Matches
1st Round. Wednesday, May 22nd.
v. Westminster
Anthea Sutton and Priscilla Heather, won 3, lost 0.
Ruth Williams and Janet Hoch, won 1, lost 1.
Clare Stevenson and Penny Heather, won 1, lost 1.
Guy's won 5—2.
2nd Round. Wednesday, June 5th.
v. Charing Cross
Anthea Sutton and Priscilla Heather, won 2, lost 1.
Ruth Williams and Janet Hock, won 1, lost 2.
Ann Alexander and Wendy Higlett, won 1, lost 2.
Guy's lost 5—4

GOLF

v. Charing Cross Hospitals, 8th May, at Roehampton.
Lost—1½—3½.
D. O'Gorman, lost 3/2, 6/4.
D. Carle, halved
P. Mewton, lost 3/2.
K. Hughes, won 3/2.

v. Middlesex Hospital, 14th May, at Croham Hurst.
Lost—3½—1½
E. Baird, halved
D. Miller, won one hole.
D O'Gorman, lost 5/3.
D. Carle, lost 2/1.
P. Mewton, lost 6/4.

Dental Students v. Dental Staff. 28th May, at Selsdon Park The Dental Students won by 3 matches to 2
Results:

Staff		Students	
Mr. Mansie	O	Baird	I
Mr. Davis.		Page	
Mr. Haggeri	O	Gedge	I
Mr. Robinson.		Mewton	
Mr. Nairn	I	Rankin	O
Mr. Stewart		Miles	
Mr. Richards	O	Farnworth	I
Mr. Taylor		Cook	
Mr. Baker	I	Fisher	O
Mr. Stoddart		Smith	

Beveridge-Eckhoff Cup. 22nd May, at Sunningdale
Eckhoff Cup.

	Old Course	New Course	Total
A. G. Clay (C.E.M.) ..	75	74	149
D. A. McCay (Guy's) ..	76	73	149
G. Hyde (N. Poly.) ..	72	78	149
J. Anderson (Thomas') ..	77	76	153

D. A. McCay lost to A. G. Clay in a "Sudden Death" play-off, on the first hole, taking 6 to Clay's 4.

Beveridge Cup.

1st—Thomas'		
Anderson		153
Hopper		156
Frazer-Moodie		166
	Total	475
2nd—Guy's		
McCay		149
Adams		160
Miller		170
	Total	479

HOSPITAL INFORMATION

APPOINTMENTS VACANT

GUY'S HOSPITAL, S.E.1.

Applications are invited for the post of **Registrar** in the **Department of Psychological Medicine** with duties from 1st October, 1963. Appointment for one year in the first instance. Forms of application are obtainable from, and should be lodged with, the Superintendent, Guy's Hospital, S.E.1., not later than **28th June, 1963.**

Applications are invited for the post of **Junior Lecturer** in the **Department of Chemical Pathology,** commencing on 1st October, 1963. Candidates should be either medically qualified or possess a higher qualification in biochemistry. Salary according to qualifications and experience in the range (a) for medically qualified candidates £1,150 to £1,350 (subject to review) or (b) for non-medical candidates £1,200 to £1,400, plus £60 London Allowance; with superannuation, and family allowance if applicable. The duties are primarily to pursue original research, although the successful candidate will be expected to take part in undergraduate teaching. Further particulars may be obtained from the Dean, Guy's Hospital Medical School, with whom applications, giving the names of three referees, should be lodged not later than **1st July, 1963.**

GUY'S HOSPITAL MEDICAL SCHOOL, S.E.1.

Applications are invited from medical graduates for a vacant **Lectureship** or **Junior Lectureship** in the **Department of Physiology.** The starting salary will be within the range £1,200 to £2,150, plus £60 London Allowance, according to qualifications and experience, with superannuation, and family allowance if applicable. Commencing date 1st October, 1963, or before. Applications should be made not later than **28th June, 1963,** on a form obtainable from the Dean.

Applications are invited from medically qualified men or women for a post of **part-time research worker** in the **Diabetic Clinic** on two afternoons a week. The work will entail analysis of records and examination of patients, with an opportunity for preparing original work. Salary at Registrar or Senior Registrar level. Apply giving details of qualifications and experience to the Dean, Guy's Hospital Medical School, S.E.1.

APPOINTMENTS

UNIVERSITY OF LONDON

B. W. L. Brooksbank has been recognised as a Teacher of Biochemistry at Guy's Hospital Medical School.

PASS LIST

CONJOINT BOARD

D.C.H.

R. G. Bury
S. R. Meadow
D. Pickering
R. H. C. Vaux

D.T.M. & H.

M. D. Farrar
R. C. Francis

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

Membership

M. K. Strelling
D. M. Maclaren

ROYAL COLLEGE OF PHYSICIANS OF LONDON

Fellowship

At a comitia of the college on April 25th the following were elected to the Fellowship:

T. M. L. Price
W. H. Trethowan

UNIVERSITY OF LONDON
THIRD (M.B., B.S.) EXAMINATION FOR MEDICAL DEGREES

April, 1963

Honours

M. P. Jeffery (distinguished in medicine)
S. Talbot (distinguished in pathology)

Pass

P. M. D. Anderson	P. G. Kelly
D. G. Bancroft	R. D. Lee
Anita Barltrop	Rita F. Leigh
J. W. V. Barrett	F. P. McGinn
F. D. H. Birkett	A. Martin
N. F. Boyd	R. G. May
P. R. Camm	Ann Parker
J. A. Child	Mary Restell
J. A. Clarke	A. J. Richards
E. E. Cockayne	B. L. Robinson
Ann Y. Coxon	A. J. Robson
A. G. Cumberland	J. K. Scott
F. S. Davidson	R. A. Sells
I. J. Davis	K. K. Shah
J. A. Dickinson	M. J. Sharman
F. F. T. Djabanor	M. Singh
W. D. A. Foster	M. V. Smith
Juliet C. Gardner	T. S. Spencer
H. J. L. Griffiths	R. J. Walden
E. H. Harley	N. J. Y. Woodhouse
M. J. House	B. S. Worthington

Part I

J. N. C. Atkinson	G. T. Klauber
V. Borirakchanyavat	J. H. T. Marshall
Cynthia M. Britton	A. Murphy
D. K. C. Cooper	B. S. Pound
V. E. Egwuatu	D. J. Simler
R. P. Hollingsworth	A. Thomas
B. S. Kalsi	McD. J. Wright

Part II

M. E. Conybeare	Danuta M. H. Laganowska
W. S. Foong	
R. P. Hollingsworth	J. H. Steadman
P. Ivanans	

Part III

P. Ivanans	J. H. Steadman
M. G. Lim	

Part IV

D. J. Boulton	Danuta M. H. Laganowska
B. V. H. Bray	
M. E. Conybeare	G. M. Lim
W. S. Foong	P. A. Ustianowski
R. P. Hollingsworth	D. R. Wilson

PAPERS BY GUY'S MEN

In order to make this list as complete as possible, Guy's men whose papers have not been noted in this column are asked to send the Editor details of their publications.

Black, S. Shift in dose-response curve of Prausnitz-Kustner reaction by direct suggestion under hypnosis. *Brit. med. J.* 1963, i, 990.

Blaxter, P. L. Uveitis. *Practitioner*, **190**, 596.

Butterfield, W. J. H. Aetiology of diabetes, in *Disorders of Carbohydrate Metabolism* Ed. D. A. Pyke, London 1962.

Calne, R. Y. Inhibition of the rejection of renal homografts in dogs by drugs. *Ann. roy. Coll. Surg.* 1963, **32**, 281.

Fry, John. Corticosteroids in general practice. *Practitioner*, 1963, **190**, 636.

Fry, John. What the family doctor asks of the district nurse. *Nursing Times* 1963, **59**, 550.

Griffith, J. and Patterson, C. The structure and relationships of the Jurassic fish *Ichthyokentema purpeckenis*. *Bull. Brit. Mus. Nat. Hist. Geol.* 1963, **8**, 1.

Hardwick, C. Clinical aspects of hypoglycaemia. in *Disorders of Carbohydrate Metabolism* Ed. D. A. Pyke London, 1962.

Holling, H. E. Gout and glycogen storage disease. *Ann. intern. Med.* 1963, **58**, 654.

Ingram, F. L. Pattern of bone in health and disease. *Dent. Practit.* 1963, **13**, 328.

Joubert, J. D. Some thoughts on the Fourth Congress of the Urological Association of South Africa. *S. Afr. med. J.* 1963, **37**, 273.

Keen, H. Autonomic nerve involvement in diabetes, in *Disorders of Carbohydrate Metabolism*. Ed. D. A. Pyke, London, 1962.

Kennedy, G. C., and another. Hypothalamic control of energy balance and the reproductive cycle in the rat. *J. Physiol.* 1963, **166**, 395.

Kennedy, G. C., and another. Body weight and food intake as initiating factors for puberty in the rat. *J. Physiol.* 1963, **166**, 408.

Kennedy, G. C., and another. Spontaneous pseudopregnancy and obesity in the rat. *J. Physiol.* 1963. **166**, 419.

Kilpatrick, F. R., and another. Post-operative recto-prostatic fistula and closure by Kraske's approach. *Brit. J. Urol.* 1963, **34**, 470.

Law, F. W. Strabismus. *Practitioner.* 1963, **190**, 580.

Lorber, J. Spina bifida cystica. *Brit. J. clin. Pract.* 1963, **17**, 253.

McCallum, R. I. Occupational hygiene in Newcastle-upon-Tyne. *Newcastle med. J.* 1963, **27**, 225.

Mallett, B. L. and Veall, N. Investigation of cerebral blood flow in hypertension using radioactive xenon inhalation and extracranial recording. *Lancet*, 1963, i, 1081.

Moffatt, P. McG. Disorders of vision in the elderly. *Practitioner*, 1963, **190**, 605.

Moynahan, E. J. and others. Acrodermatitis enteropathica: demonstration of possible intestinal enzyme defect. *Proc. R. Soc. Med.* 1963, **56**, 300.

Wells, R. S., and another. Natural history of granuloma annulare. *Brit. J. Derm.* 1963, **75**, 199.

NURSING NEWS

Entered

Sister B. Arnold to Nurses' Home

Left

Staff Nurse Linfield from Cornelius

Staff Nurse W. Matthews from Theatres

PERSONAL

Special rates for Guy's Staff, Students, Nurses and Subscribers to the Gazette. 5 words 10s. 6d. 15 words 21s. 0d. Box Numbers 1s. extra.

Ordinary rates 15s. 0d. 5 words. Box Numbers 1s. extra.

WANTED

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Mr. and Mrs. J. Southgate, 77, The Avenue, West Wickham, Kent.

BIRTHS

FRANCIS.—To Rufina (née Akerele) S.R.N., C.M.B., Q.N. and Theodore I. Francis, M.B., M.R.C.P., a daughter, Rufina Bomo Olatokunboh, on the 15th February, 1963.

MARRIAGES

COOK—BERMINGHAM.—On the 20th July, 1962, in Sydney, Australia, Peter Cook, M.B., B.S., D.Obst., R.C.O.G., to Wilhelmina Bermingham.

DEATHS

GRAY.—On April 28th, 1963, A. C. H. Gray, O.B.E., aged 85, of Stour Fields, Nayland, Colchester, Essex.

LANE.—On May 2nd, 1963, S. C. H. Lane, O.B.E., late of Wilton, Salisbury, Wiltshire.

GUY'S HOSPITAL GAZETTE

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Editors *W. G. Reeves*
I. A. Baker

Sports Correspondent *E. Tiller*

Guy's Hospital, London

Children and Society

Recently the brutality meted out to Nancy in a television production of *Oliver Twist* caused much concern. Many who saw it complained that it was unnecessarily realistic, especially as the programme was primarily intended for children. However, this response emphasises how far a cry it is to those undistinguished days which favoured such a heartless treatment of its poorer children, and it indicates the change which has taken place in social attitudes to suffering in general and the exploitation of children in particular.

Foundlings, climbing boys, factory apprentices, slums, gin-drinking, ragged schools, waifs and strays: such a list brings into the mind's eye that kind of picture which Hogarth and Mayhew have left for us. During the 18th and 19th centuries the extremes of poverty and wealth were separated by a much wider gulf, and in addition an inherent inferiority was often assumed in those who were poor, in a similar way to the comparable assumptions made to-day by many of those who advocate racial discrimination.

According to the petition which Thomas Coram drew up in 1740 to obtain a charter for the first Foundling hospital in London, children were frequently murdered at birth or left to perish in the streets; were often allowed to starve by "barbarous nurses" to whose care they were entrusted; and "if permitted to live" were trained in infamous ways of living or even deliberately maimed that they might be the more appealing objects for alms. The situation degenerated further with the advent of the Industrial Revolution, for children provided the readiest source of cheap labour. It was Lord Shaftesbury who discovered that six-year-old children were working up to sixteen hours a day, deprived of proper food, homes or affection. The prevailing moral attitude at this time can only be described as one of *la belle indifférence,* and it took the work of many reformers to awaken the public conscience to the inhuman existence which many of these children knew. On a visit to Billingsgate fish market, Shaftesbury, in company with a medical student from the London Hospital, Barnardo by name, found 73 homeless boys sheltering among empty boxes and tarpaulins.

To-day, physical disease, vagrancy and poverty are no longer major problems among children and with the growth of a welfare state a new and perhaps more subtle assortment of maladies have appeared. It is disorders of emotional and intellectual growth that now provide most of the problems, which may lead on to delinquency and crime or just pure apathy and lack of ambition. Inferior housing conditions, the random street-life of many children living in crowded dwellings, and the difficulty of achieving effective school education when there is little or no "follow-up" or encouragement at home, are all adverse factors which vary in their intensity from place to place. Physical want is now rare but emotional deprivation is, however, not so uncommon.

Here beside Guy's, the local children of Bermondsey and Southwark form part of a well-knit community whose roots go deep and

embrace many old and cherished traditions. The cockney wit and dialect is reputedly stronger here than to the North of the river and the redundant use of the word "like", the rhetorical question (e.g., "didn't I?") and rhyming slang are still much in evidence. The youngsters here share many problems, most of which they overcome with characteristic ease. Other problems remain, carrying greater significance, and it is these and other aspects of their lives which are discussed in an article on page 318 of this issue.

Une Carrière Heureuse ?

In a recent edition of "La Presse Medicale", the following curt comment appeared: *"La Grande Bretagne forme chaque année* 1800 *médecins dont* 300 *femmes.* 700 *de ces médecins partent pour l'Australie, la Nouvelle-Zélande, le Canada, l'Amérique, etc. . . . Les médecins anglais ne trouveraient-ils pas dans leur pays les conditions d'une carrière heureuse?"*

The figures are at first surprising and give rise to several queries as to their assessment and meaning. It is strange that in our more comprehensive health system no official analysis has appeared of this highly important tendency for British qualified doctors to leave this country to practise abroad. The Royal Commission on Doctors' and Dentists' Remuneration of 1960 concluded that the level of net emigration amongst doctors and dentists—"we consider of no special significance". In the absence of any other estimations, various individuals have from time to time enquired into and published reports on the whole or part of this outflow of graduates.

Dr. John Seal (B.M.J. 1962) in an extensive investigation into emigration to other parts of the Commonwealth and the United States, showed that an average total of over 600 British qualified doctors register annually in these countries. This amounts to one-third of the yearly output of medical schools in the United Kingdom and Eire. In a further report on emigration to the United States, Dr. R. H. Davison (B.M.J. 1962) showed that the migration rate of doctors was in excess of that to be expected in the overall migration. Both these reports show clearly that not only is there a high percentage of medical graduates emigrating, but that the rate is increasing.

Emigration increased with the advent of the Health Service and no doubt dissatisfaction with part or all of our system accounts for a significant number of those leaving. Others return to their country of birth or seek greater opportunities and rewards, academically or financially. Post-graduate education and assistance in under-developed countries account for a separate temporary migration.

These facts, together with the modest recruitment of medical students in training, have given rise to a serious depletion in the younger generation of the British medical profession. The Porritt Committee, in its report of 1962, recommended that steps be taken to establish a proper mechanism for recording all the facts relating to medical manpower in the Health Service. If their advice is taken and the surge of emigration accurately assessed, then rumours and conjecture can be put aside and those concerned with our future will be better informed and Frenchmans' questions could be answered.

GUY'S DIARY

JULY

EXHIBITION. *Fractures of the Spine.*

1st	M.	1.00	Dr. BAKER. Clinical Lecture.
2nd	T.	1.00	Mr. ECKHOFF. Clinical Lecture. *Nasal Deformities.*
5th	F.	1.00	Dr. KAUNTZE. Clinical Lecture. *The Diagnosis of Pulmonary Infiltration.*
8th	M.	1.00	Mr. TOMKINSON. Clinical Lecture. *The Obstetric Problem of Foetal Abnormalities.*
9th	T	1.00	Dr. WAYTE. Clinical Lecture.
11th	Th.	1.00	Dr. HOARE. Clinical Lecture.
12th	F.	1.00	Professor BUTTERFIELD. Clinical Lecture. *The Future of General Practice.*
13th	S.	10.00	Departmental Round. Professor D. W. SMITHERS of the Royal Marsden Hospital. Clinical Theatre.
15th	M.	1.00	Mr. SALMON. Clinical Lecture.
18th	Th.	1.00	Mr. GLOVER. Clinical Lecture.

Dr. Charles E. Gallagher, O.B.E., Senior Medical Officer, Ministry of Health, has been promoted to Special Principal Medical Officer in charge of the Regional Medical and General Practitioner Services, Ministry of Health.

REPRINTS

Reprints of the following articles recently published in the *Gazette* are now available:—

Bermondsey and Southwark, IV., "*Life and Health*", by Roger Blaney.

A Scientific Background to Clinical Medicine:—

1. *Fundamental Genetics* by B. J. Rickard.
2. *The Biochemistry of Genes* by W. L. G. Gent.
3. *Human Chromosomes and their Abnormalities*, by Janet Northfield.
4. *Inborn Errors of Metabolism* by P. F. Benson.
5. *Congenital Abnormalities* by R. G. Spector.

These and subsequent reprints in this series, may be obtained, price 1s. each, from the Manager, Gazette Office.

OBITER DICTUM

Professor Polani going down the stairs of the Paediatric Research Unit with the Duke of Edinburgh, 11th June:

"Yes, my horse does that, too".

The Children

by SARAH MARSHALL

Photographs by MARTIN WALKER

" . . . They have been either untaught, mistaught, maltreated, neglected and regularly trained to vice or fairly turned out into the streets to shift for themselves. The censure then is attributable to parents, or those who should fill the place of parents—the State or Society."

These words were written of children living in South-East London over one hundred years ago. If Henry Mayhew were to return to-day, and visit a certain tenement house in Southwark, he would weep to see how relatively little change has taken place during the last century concerning the present circumstances of two children. The elder of the two, James, now three years old, lies all day on a heap of filthy bedding, which he shares at night with his mother and aunt. In the opposite corner there is a cot, provided for him by the Welfare State, but occupied most of the time by his uncle's greyhound. James does not know the rest of his home well, but he would be no more comfortable if he did. When it rains the walls of the house pour; the ceilings sag and water runs down the already collapsing stairs from gaping holes in the roof. He is not unhappy in this existence. He knows nothing else. He has never bathed or seen a lavatory and has but a vague idea of the function of clothing. He is unwell and nearly always hungry. He has, however, one great advantage which many "luckier" children perhaps lack ; the complete devotion of his mother. Although, with the rest of her family, she spent several years in a mental institution, and has little or no conception of the material needs of a growing child, she loves him with an unwavering intensity. She will never leave him for an instant and expends on him an adoration which, in kind, could provide baths, food, clothing and health for millions. He has no friends or playmates of his own age and only the remainder of the household for company. His little cousin, John, the only other child he knows, is at present in hospital, below his birth weight at the age of three months. James's world does not yet include a father. When he is older he will need one, and when he discovers, as it is thought he will, that his father is also

his uncle, the shock may cause a hurt so deep that it cannot be healed by all the love his mother could ever provide.

Many people would say that no child should be allowed to live in such an atmosphere, and that James should be taken into a home. On the other hand, should a child ever be separated from such a loving mother, however incompetent she may be? There are people who maintain that a bad mother is better than no mother at all. The obvious solution would be to place both mother and child in a home that would care for them together. At present, no such place is available for them, so every effort is being made to keep them together and teach the mother how to look after, as well as to love, her child.

The Majority

Mercifully, this type of appalling situation is very rare to-day. Other stories could be told of children in Bermondsey or Southwark whose fathers are drunk, dead, in prison or even unknown to them, who are living tolerably normal lives, and will grow into healthy, if not very happy or secure individuals. Their mothers make the best use of the assistance offered to them, and perform near-miracles, often in two damp, unheated rooms, to bring up their children decently. However, on the whole, the local people have never been better off. In Southwark, the really needy families can be counted on the fingers of two hands. In Bermondsey, of which Robert Sinclair wrote: ". . .

". . . whose impoverished community, forming a barrier between the docks and central London, is socially almost more limited than that of the simple peoples of East London", the figure is certainly no higher than two per cent.

Far from being neglected, it is generally thought by those that know and deal with them, that the children of Southwark and Bermondsey are over-indulged. Their parents, brought up at a time when work, food and money were painfully scarce, are determined that their children shall lack nothing that they themselves had to do without. Perhaps they try too hard to provide their numerous offspring with "the best". It is certainly true that the youngsters have no conception of the value of their possessions. No toy stays whole for long. It is broken, lost or even ignored, because its owner knows full well that

he only has to ask for another and he will get it. In their efforts to provide their children with the material best, many parents seem to forget, or do not realise, that a little more obvious affection and a feeling of belonging would be of more value to their child.

If you live, as the majority of the local children do, in two or three rooms with Mum and Dad and several brothers and sisters, you are apt to get in the way. Your efforts to help at home are rejected impatiently by a harassed mother, tired after a full day's work, who is valiantly trying to prepare a meal for five or six in the only living room; so you are given five shillings to go to the pictures, or told to go out and play. There is often nowhere to play but the street or the court-yard around your particular block of flats, so you become a street wanderer. If your parents need a night out together they may ask a neighbour to "watch out" for you; but they may equally well leave you alone. The fears and horrors that grow in the minds of children alone in a house at night are very real. The tigers under the bed, the strange men in the cupboard, funny noises in the next room and even an overwhelming fear of being unable to breathe, can easily strike terror into the hearts of children alone. Rather than suffer this they join their friends in night escapades in the neighbourhood. In the streets and alley-ways they may play football or cricket until the light fails. They may chase cats, break bottles on doorsteps, or stalk each other stealthily round the block, quivering with excitement in the effort of not being seen before they have tracked down their quarry. The older boys may fight. The older girls may spend hours gazing longingly into a few lighted shop windows and wishing they could have all the beautiful things they see on "the telly". However they spend their time in the evenings, these children endanger their lives from passing traffic and their health from lack of sleep. An all too frequent response on being asked what they do in the evenings is "Mum and Dad don't mind what I do as long as I leave them in peace."

Those who do not wander at night, and who are not allowed out after dark, spend a very large amount of time watching television. A great deal has been said and written about the effect of television on the impressionable minds of young children. The fact remains that they are all influenced by it to a greater or lesser degree, and whether or not it destroys their sense of values, it must inevitably

make them realise that many people live very much better than they do. If they have parents who are interested in their ideals they may be encouraged to read, or look at picture books. They may take home little models or paintings, that they have started at school, to complete them. They may play games in which the whole family joins. However, in the limited space of the only available living room, and with the baby asleep in the bedroom next door, this is very often not possible, and the more creative children have little outlet at home for their talents.

Their Homes

Those concerned in the welfare of Bermondsey and Southwark children and their families maintain that the crying need of the population is for better housing conditions. The children are not discontented with their home conditions. Home is where your family lives, however cramped and uncomfortable it may be, and living in overcrowded rooms and sleeping four in a bed is something they have always known and accepted. Nevertheless, the young parents of young children, who have themselves always lived in this area, grow bitter and angry when they see new flats being provided for the "foreigners", who have been temporarily housed in the tenement blocks known as "half-way houses". These people mostly come from Cyprus, the West Indies or Ireland, or even other parts of London. "Many do not work. Many have large families. They drink and fight in the streets, and their children are often rough and unmanageable, poorly educated, dirty and a bad influence on the local children with whom they are bound to mix." This has been brought about through no fault of their own. These migrant children have never had the benefit of regular attendance at the same school. They have often not lived in the same building for more than six months. They are continuously being uprooted and moved elsewhere as their families are transferred from one council establishment to another.

The old-established Bermondsey and Southwark families, struggling to maintain a decent standard of living in an old house or flat with every inconvenience, know they could have something better. Their homes are usually spotless, but that does not mean that they have not had to fight an endless battle with dirt and damp to keep them so. They know that there are modern, warm, dry, comfortable homes being opened every day. They know that their young children need not sleep all in one room, be woken by street fights at night and breathe exhaust fumes all day. Resentment against the invaders grows, and faith in local authorities and housing lists wanes fast as they watch the families of the shifting population moving into new accommodation which they have often done nothing to deserve.

Perhaps this presents rather too gloomy an outlook for the young of Bermondsey and Southwark. Nobody denies that living conditions are improving. The argument is that they are not improving quickly enough to meet the needs of the population.

Their Holidays

A short while ago an appeal was made on the B.B.C. for contributions to the Children's Country Holiday Fund. This is a worthy organisation designed to provide a spell of fresh air and sunshine, for among others, the under-privileged children of South and East London. In a moving supplication for funds, the Earl of Arran dwelt on the numbers of deprived and impoverished youngsters "many of whom have never seen a cow". This is now an anachronism. The majority of local children have at least a week-end at the seaside with their families. Those who cannot afford this have holidays in the country or by the sea with their schools or youth clubs. Very few children of school age have not seen a cow some time in their lives! Those who have not are unlikely to be worried by the fact. They see most of the ordinary country animals on television and know what they look like. If asked directly they would probably far rather see a cowboy in the flesh any day.

St. Saviour's School, in Redcross Way, organises, under the sponsorship of the L.C.C., an annual school holiday for its most senior members. These children, with two members of staff, go away for two weeks in the Summer term, usually to the South Coast. This year they went to Dorset. Here they stay in local boarding houses and have their time equally divided between sight-seeing for educational purposes, and games on the beach and bathing, when the time is their own. They have the opporunity of going for long country walks and seeing dozens of cows and sheep, as well as green grass and flowers and trees which they rarely see in London, even on television.

If the necessary funds are unavailable from home, these holidays are subsidised for the poorer children, so that they are available to all who have earned them. They are coveted rewards for good school records for most of the children. The only reasons for not going on "school journey" if you are eligible are interference by jealous parents or fear of the unknown. A few children confess to refusing the opportunity because they have never left home and cling fiercely to the devil they know, in the back streets and carbon-laden atmosphere, rather than risk the clear sunshine and salt breezes of the devil they do not know.

Their Health

The physical health of the children is no longer a major problem in Bermondsey or Southwark. They have never been healthier. This improvement has taken place almost entirely since the war and the advent of the National Health System. "Free health" is available to all and they make use of it. The improved facilities for pregnant mothers, babies and infants has drastically reduced the infant mortality rate. The milk and orange juice supplies have assured them of at least a fair quota of the right kind of nourishment. Vaccination and immunisation have become almost obligatory, and free medical and hospital treatment when they need it have revolutionised the child

health problem of the area. Although by virtue of the part of London in which they live, bronchitis and other respiratory diseases are still common among the children, killers like tuberculosis, diphtheria and polio have been virtually eliminated. In 1960, four cases of polio, three of diphtheria and twenty-six of pulmonary tuberculosis were notified among children in Southwark under the age of sixteen. None was fatal and the numbers are still falling.

Two hundred years ago—in 1765—in the parish of St. Mary Magdalene in Bermondsey, seventy per cent of the children born were dead before the age of four years. In the same year in the parish of St. Saviour, Southwark, forty-eight per cent of children died before they were a year old. At the end of 1962 the perinatal mortality rate in the area was estimated at approximately three per cent, and the deaths under one year at about two per cent of all live births. Nowadays, if you are born in Bermondsey or Southwark, you have a reasonable expectancy of reaching a ripe old age.

A much more pressing problem to the Health Authorities is the health of children's teeth, so quickly ruined by the wrong foods and too many sweets. Dental care in the local primary schools has become a major issue. The increase in the number of mentally subnormal children in the area has also attained prominence in recent years. In the region of Bermondsey and Southwark, which for Ministry of Health statistical purposes is grouped with Lambeth, the incidence of mental subnormality is 20.2 per 1,000 children, as compared with the national average of 15.8. This figure is also higher than the average for the rest of London. However, the increase in interest and reasearch in this field has become so prominent recently that more cases have come to light than previously, and the exact relevance of these figures is questionable.

Their Education

Schooling for many local children begins at the age of two or three. By the time they reach this age their mothers either feel in need of a little peace and quiet in the day-time, or want to return to work. Up to the age of three or four they can go to a day nursery, where they are well cared for and are given at least one good meal, during the time when their mothers cannot be with them. Apart from gradually getting used to mixing and playing with other children of their own age, they are actually taught very little here. They can play games, dance to the gramophone or radio, paint pictures or make sand-pies until their mothers collect them and take them home. The hours of attendance are quite unrestricted and designed to suit the needs of the working mother.

A Nursery School is a very different place. There are only twenty-six run by Local Authorities in the whole of London, one being in Kintore Way, just off Grange Road. The headmistress here is passionately interested in children, their education and their sense of security. The children come to her school to learn. It forms a foundation on which to base their behaviour and understanding

when they reach compulsory school age and enter primary school. The trauma attached to the moment of separation of mother and child for the first time is keenly understood by this headmistress, and for the first week or so of his attendance the child's mother comes with him to school and stays there while he settles down and makes his own friends. In this way no four-year-old is allowed to feel abandoned in a totally strange environment and with his mother around can settle down to the serious business of imbibing knowledge.

At this school, as in the nursery departments of primary schools, the teachers are fully trained people who firmly believe that a child should learn to express himself and produce his own ideas. There is little formal teaching for the "infants". By a process of subtle suggestion the child is led to paint pictures of his own ideas, to make little ships of clay or plasticine, model rabbits, cars, aeroplanes, rockets or skyscrapers; to play at being an explorer, an engine-driver, a nurse or simply "*Mums and Dads*". There are few sad faces at Kintore Way, indeed there are few at any local nursery school. These children have a rare talent for happiness. They are helped by the knowledge that they are in an atmosphere designed for and receptive to their ideas, troubles, fears and difficulties. Life is happy and uncomplicated as is manifest again and again in the glorious blue skies and golden suns that so many of them paint.

Even when they first go to primary school at the age of five there is little formal teaching. They begin to learn to read and write, and to add and subtract, but are still allowed this freedom of expression in doing whatever takes their fancy. At the age of eight or nine, by which time the majority can read and write, the children have systematic teaching, a great deal directed towards the eleven-plus examination. Most of their parents are anxious for them to pass it, but to the children themselves it matters little whether they have a Grammar or Secondary school education. The children who do pass tend to come from stable, well-established families. These families have lived in the area, perhaps in the same house, for several generations, and their children have a solid background of hard work and a deeper sense of security than many of the other school children.

This sense of security is a very real need for a large number of the local children. They have a very obvious need of affection, reassurance and encouragement. This is manifest in their almost unnaturally extrovert attitude to their teachers at school, to their parents, who often have not the time or opportunity to return it in full, and to any strangers who may enter their small world. They need to hold your hand, to put their arms round you and to show you that they will respond all too readily to any affection you will give them. They continuously offer affection first in the hope of it being returned, rather than responding gradually as they realise that it is being offered to them. They are too pleased by praise and far too deeply disillusioned by small criticisms. This transparent desire for love may well lead to the over-indulgence which is so often criticised. Fear of hurting their children may lead their parents and teachers to spoil them.

Michael, at a Southwark primary school, is now on probation following conviction of stealing the lunch money from his school. He accomplished this on two consecutive nights with one of his "mates". He did not want or need the money. He has ten shillings a week of his own from his father. He did it to hit back at his form master who has vainly tried to discipline him.

Most of the local children have no real desire to learn. They can rarely write and read competently before the age of seven. They do not read books for their own sakes, but will enjoy looking at pictures or films or anything that requires little effort on their part. Books are "soppy". Their parents rarely read and the only printed word they see in their own homes are often such things as the greyhound news and women's magazines. They find concentration on a single subject difficult, if not impossible. Their attention is forever wandering, leaping from idea to distraction and back again, and they are rarely still or quiet. On the whole they have active minds and are not uninterested in what is being taught them. They are simply unable to channel their thoughts in one direction for any length of time.

Perhaps for this reason the majority of Bermondsey and Southwark children are totally unambitious. They do not ever consider

that they might go to university. Very few of them would even want to. Their ideas of "what I want to be when I grow up" do not extend far beyond being a sailor or a lorry driver, a cook or a ballet dancer. Most of them have not thought much about it by the time they leave their primary schools. Though many of them have dreams of becoming "a pop singer", they do not consider it as a serious possibility. When they leave school the boys will, on the whole, drift into jobs in the docks or local factories, while the girls will become shop-assistants or shorthand-typists until they get married.

For all this they are intelligent and wholly likeable children. They have very good money sense and can turn many a situation to their own advantage. They are sharp, quick-witted and in many ways extremely self-reliant. Very often they have no one but themselves to rely on. Anybody who has anything to do with these children as a group thinks they are "wonderful kids". Their spontaneous good humour, sense of fun and mischief, quick repartee and sheer dogged guts wins them friends who are almost their slaves. Such friends will work for them until they drop, endeavouring to create for them a better standard of living, a more stable background and a sense of solid security. Even without this they are convinced that their local children will get on in life, not by means of what they have, but purely by virtue of what they are.

Acknowledgements. *I would like to thank most warmly all those who gave me such valuable help in compiling information for this article. They are all far better qualified to write about the local children than I am. I want to mention especially Miss Allen and Mrs. Hardwicke of Bermondsey Health Centre, Mrs. Brewster of Pakeman House Welfare Centre, Miss Ashwin of St. Saviour's School, and Miss Furneaux of Kintore Way Nursery School. They sacrificed a great deal of their time to tell me about and introduce me to their children. I am sure they have no idea how much their friendly reception and kindness encouraged me in my first tentative efforts at research*!

REFERENCES

HENRY MAYHEW. 1951. London Labour and London Poor.

ROBERT SINCLAIR. East London.

M. D. GEORGE. London in the Eighteenth Century.

Annual Report of Medical Officer of Health for Southwark, 1960.

L.C.C. Annual Report of the Medical Officer of Health, 1963.

Health Services and how to obtain them. London County Council.

Sex Determination and Development

by J. L. HAMERTON,
Paediatric Research Unit.

The problems of sex determination and development are complicated and are just beginning to be better understood in mammals.

While the mechanisms and influences which control sexual development during foetal life and after are much less clear, it is generally accepted that in sexually reproducing species the sex of an individual is genetically determined. The behaviour of the sex chromosomes and their relationship to sex determination was studied first in grasshoppers and the fruit fly, *Drosophila*, in the early part of the present century and latterly in man and the mouse, and it is the purpose of the present paper to review the genetic and environmental mechanisms responsible for the determination and development of the sexual state in man and to consider some of the problems involved in a study of human intersexual conditions.

Chromosomal Basis of Sex Determination

The problem of the genetic mechanism of sex determination was first brought into focus at the beginning of the present century by the rediscovery of the work of Mendel and the fact that the majority of organisms have a sex ratio normally approaching unity. A genetic ratio of this type is characteristically obtained in the offspring of two organisms, one of which is homozygous for a particular factor, and the other heterozygous for it. In 1891, Henking (Wilson, 1925) described a differentially staining body which segregated without dividing during meiosis. He called this the X-Factor. McClung (1902) described an accessory chromosome in certain insects and suggested that this might be the sex determinant. This idea was further investigated in another group of insects, the Hemiptera (Stevens 1905 Wilson 1905), and these authors showed that in males there is a pair of unequal chromosomes known as the sex chromosomes which segregated during spermatogenesis so that half the sperm have one and half the other. In females no such heterogameity exists and all the ova have similar chromosome complements. The sex chromosome, which is morphologically similar in both males and females is called the X chromosome and the chromosome which occurs only in males, the Y chromosome. In 1908 Stevens demonstrated that the females of *Drosophila* had two like X chromosomes and males one X only and a dissimilar Y chromosome.

The chromosomes of man were first described by Arnold (1879) in tumour cells. Winiwarter (1912) counted 47 elements in the human

testis and 48 in the ovary and concluded that man had an XX/XO type of sex determination. However, Painter (1923) concluded that the chromosome number of man was 48 in both sexes, and that the sex determination was of the XX/XY chromosome type. This was generally accepted by most workers with the exception of Winiwarter and his pupils (Winiwarter and Oguma 1926) who continued to insist on the absence of a Y chromosome in human males. The matter was not finally settled until 1956 when, with the application of improved techniques, Tjio and Levan established that the correct human chromosome number was 46 and the sex chomosome constitution XX/XY. This was rapidly confirmed in the same year by Ford and Hamerton using testicular material.

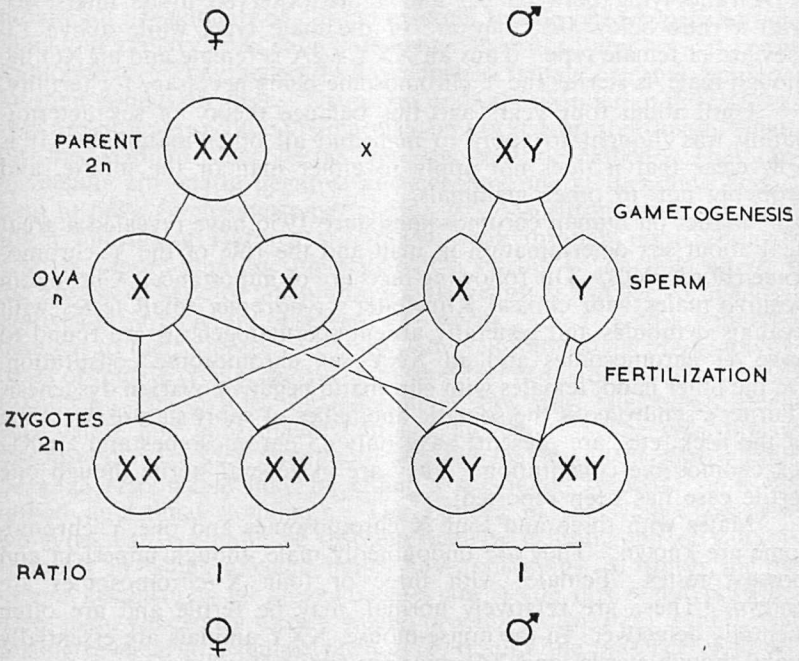

Figure 1: Diagram to show the chromosomal basis of sex determination in mammals where the female is homogametic and the male heterogametic.

The mode of chromosomal sex determination is shown in Fig. 1. In man and in mammals generally the male has unlike sex chomosomes and therefore produces two classes of spermatoza, X-bearing and Y-bearing. The male sex is said to be heterogametic whilst the female has two like sex chromosomes and produces only one class of germ cells and is said to be homogametic. In birds the reverse applies, the female is the heterogametic sex and the male the homogametic sex.

Sex Determination in Mammals

The classic theory of sex determination is based on studies on *Drosophila,* and, until very recently this theory was believed to apply to mammals.

In *Drosophila* the phenotypic sex is determined by the ratio or balance between the number of X-chromosomes and the number of sets of autosomes; the Y chromosome for the purposes of sex determination, though not for fertility, is inert. Thus, in the normal male of this species the chromosome constitution is XY + 2A (A = one set of autosomes) so that the X/A ratio is 0.5. Normal females have a chromosome constitution XX + 2A with an X/A ratio of 1.0. This balance theory of sex determination has been found to apply in flies with an abnormal number of chromosomes: thus, those with an X/A ratio lying between 0.5 and 1 are observed to be intersexes, with a ratio below 0.5, they are of the male type, while above 1.0 they are of female type. Thus an XXY + 2A is female and an XO fly, though male, is sterile, the Y chromosome being necessary for fertility.

Until about four years ago this balance theory of sex determination was thought to apply to man and all other mammals. It is now clear that it does not apply to either man or the mouse, and probably not to other mammals.

Studies on human chromosomes since 1956 have revealed a great deal about sex determination in man and the rôle of the Y chromosome (Ford 1960). The following facts are of importance. Chromatin positive males with clinical Klinefelter's syndrome, small testes with hyalinised tubules and generally absent spermatogenesis are found to have 47 chromosomes and an XXY sex chromosome constitution. On the other hand, females with chromatin negative ovarian dysgenesis (Turner's syndrome if the somatic anomalies of short stature, webbing of the neck, etc., are present) have only 45 chromosomes and an XO sex chomosome constitution. They are in general sterile though one fertile case has been reported.

Males with three and four X chromosomes and one Y chromosome are known. They are undoubtedly male, though imperfect and possess testes. Females with three or four X chromosomes are known. These are relatively normal, may be fertile and are often mentally defective. In the house-mouse, XXY animals are essentially male, though sterile, and XO mice are fertile females.

Thus in man and the mouse the evidence which has just been summarized, clearly shows that the *Drosophila* system of X/Autosome balance does not apply in mammals. In *Drosophila* the X chromosomes promote female development and the autosomes development in the male direction, while the Y is inert though essential for fertility. The evidence from man and the mouse suggests that the Y chromosome strongly promotes development of the masculine phenotype, and is essential for normal male development in these two species, and probably in all mammals. Thus in the absence of a Y chromosome the female phenotype develops normally in the presence of two X chromosomes or abnormally when either one or three or more X chromosomes are present.

Maldevelopment of the ovary resulting from the presence of only one X chromosome leads to abnormal sexual development, although the phenotype is female or more accurately neutral. Almost universally the presence of a Y chromosome leads to the formation of testicular tissue with resultant male hormonal influences and development in the masculine direction.

Testicular Feminization

Prior to the studies discussed above three clinical conditions were usually considered to be states of sex reversal. These were Klinefelter's syndrome, Turner's syndrome and testicular feminization. It is now known that the first two conditions are respectively males and females with abnormal sex chromosome constitutions. The testicular feminization syndrome is, however, different. Affected individuals are patients of normal external female phenotype who lack pubic and axillary hair, have primary amenorrhoea and normal breast development. They generally have normal female external genitalia, but their gonads are testes. The uterus and other Mullerian duct derivatives are absent, and the vagina may be normal or abnormally small, but the Wolfian duct derivatives are well developed. They are universally chromatin negative and chromosome studies have shown them to have 46 chromosomes and an XY sex chromosome constitution. The major features are transmission through normal female relatives—more than one member of the sibship is generally affected, and always of male or presumptive male genotype. Affected maternal relatives are frequently observed, i.e., sterile "aunts" with a condition identical to their "nieces". Clearly, affected individuals are genotypic males of female phenotype. The mechanism of the defect is at present unknown. The pattern of inheritance, however, suggests a single gene defect and consequently an enzyme defect. The condition is transmitted by carrier females to affected males and because of this the gene responsible may be either a sex-linked recessive or a sex limited autosomal dominant. The pattern of inheritance of these two types can normally be distinguished by examination of suitable pedigrees in which affected males have offspring. However, in the present instance, as all affected males are sterile this is not possible. Here, then, we clearly have a single, probably autosomal, gene defect causing reversal to a female phenotype, despite the presence of testes.

The Intersexual States in Man

Clinically an intersex is an individual with ambiguous external genitalia irrespective of the form which this ambiguity takes and of the type of gonad present. The use of the term true hermaphrodite or pseudohermaphrodite is dictated by the gonadal structure. If both ovarian and testicular tissues are present, the individual is called a true hermaphrodite. If only one type of gonad is seen the patient is called a female or male pseudohermaphrodite depending on whether the gonad is a testis or an ovary. (The syndrome of Testicular Feminization described above has been classed with conditions of male pseudohermaphroditism).

Sex chromatin (nuclear sex) studies correlate highly with the gonadal sex, except in the case of true hermaphrodites and it can generally be stated that in all cases of pseudohermaphrodites the chromosomal sex correlates with the gonadal sex and the ambiguity of the external genitalia can usually be related to environmental influences, either of maternal or foetal origin or iatrogenic.

Chromosome studies have been carried out on a number of true hermaphrodites, in some cases where the presence of a mixed ovotestis is present and in others with an ovary or ovarian streak (like the gonad in ovarian dysgenesis) on one side and a testis on the other.

These have been summarized by Polani (1962). Briefly seven chromatin positive mixed (ovo-testicular) intersexes were chromosomally normal with XX sex chromosomes. In none of these has the possibility of chromosome mosaicism been entirely ruled out. Four others were chromatin negative and either XY or XO. Two further cases of mixed (ovo-testicular) intersexes were chromosomally normal with XX sex chromosomes. In none of these has the possibility of chromosome mosaicism been entirely ruled out. Four others were chromatin negative and either XY or XO. Two further cases of mixed (ovo-testicular) intersexes were chromosome mosaics—one with XO and XY and the other with XX and XY cell lines.

Polani (1962) has reviewed the possible genetic mechanisms to account for these intersexes. Basically, the chromosome findings in the true intersexual states in no way alter or amend the basic genetic theories on sex determination in man.

REFERENCES

ARNOLD, J. (1879) . *Beobachtungen über Kerntheilungen in den Zellen der Geschwulste. Virchows Arch. Path.* **78**. 279.

FORD, C. E. (1960). Human cytogenetics, the present place and future possibilities. *Amer. J. hum. Genet.* **12**. 164.

FORD, C. E. and HAMERTON, J. L. (1956). The chromosomes of man. *Nature, Lond.* **178**. 1020.

POLANI, P. E. (1962). Sex chromosome anomalies in man. Ch. 7 in *Chromosomes in Medicine,* edited by J. L. Hamerton. London. National Spastics Society and William Heinemann.

MCCLUNG, C. E. (1902). The accessory-chromosome—sex determinant? *Biol. Bull.* **3**. 43.

PAINTER, T. S. (1923). Studies in mammalian spermatogenesis. The spermatogenesis of man. *J. exp. Zool.* **37**. 291.

STEVENS, N. M. (1905). Studies in spermatogenesis with especial reference to the " Accessory Chromosome". *Carnegie Institution of Washington,* Washington, D.C.

STEVENS, N. M. (1908). A study of the germ-cells of certain diptera. *J. exp. Zool.* **5**. 359.

TJIO, J. H. and LEVAN, A. (1956). The chromosome number of man. *Hereditas,* **42**. 1.

WILSON, E. B. (1905), The behaviour of the idiochromosomes in hemiptera. *J. exp. Zool.* **2**. 377.

WILSON, E. B. (1925). *The cell in development and heredity.* 3rd ed. Macmillan, New York.

WINIWARTER, H. DE (1912). Etudes sur la spermatogenèse humaine (I Cellule de Sertoli. II Hétérochromosome et mitoses de l'épithélium seminal). *Arch. Biol.* **27**. 91.

WINIWARTER, H. DE and OGUMA, K. (1926). Nouvelles recherches sur la spermatogenèse humaine. *Arch. Biol.* **36**. 99.

CORRESPONDENCE

The Treatment of Menstrual Disorders

SIR, I was interested in J. A. P. Trafford's article on "Treatment of Menstrual Disorders". May I offer a suggestion from a different angle?

Physiotherapy has been found to be most effective for many years, and a few suitably chosen exercises, if performed daily, often cure this most distressing condition.

In these days when it is more popular to take tablets and travel by car rather than take exercise, our "teenagers" are fast becoming flabby, muscular individuals and have to depend on reinforced belts to maintain a controlled figure below the belt. This may be one reason why more young girls complain of dysmenorrhoea nowadays.

Yours, etc.,

M. E. BLOMFIELD.

Rugby in the Strand

SIR, Recently in the Gazette, Guy's was named as the oldest Rugby Club. This revived, for me, memories of a pre-war Lord Mayor's Show when Streatham R.F.C. and Guy's R.F.C. were invited to take part. It was a sort of Strength through Joy theme. I always understood Streatham to have the prior claim to seniority. Anyway, it was a dramatic occasion instigated by alcoholic anaesthesia.

I wonder if anybody except me has kicked a Rugby ball over the railway bridge on Ludgate Hill?

Yours, etc.,

J. C. JENKINS.

REVIEWS

PRINCIPLES OF GYNAECOLOGY.

by T. N. A. JEFFCOATE. Second Edition. Butterworths. Pp. 852. *Price* 105*s*.

It is a privilege to review a book of this calibre. In this second edition, Professor Jeffcoate has maintained that peculiarly personal and yet scientific approach to his subject. He has produced a book which is exceedingly readable and of assured popularity.

The new edition has been expanded largely by modification of the original chapters. An example of this, is the section on intersex, which has been considerably enlarged in the light of newer knowledge about chromosomal abnormalities.

The functional efficiency of the posterior urethro-vesical angle has been detailed and its role in stress incontinence, and also urinary retention discussed in a most interesting manner. It is as well for the student to remember, however, that other points of view exist.

An entirely new chapter is headed "Chronic Epithelial Dystrophies". In this, the author has tried to clarify the difficult subject of chronic vulval lesions. His approach is logical, but to include in the same chapter various clinical and histological conditions affecting the cervix and endometrium is, in my opinion, rather confusing.

I have no hesitation in recommending this work as the most valuable and stimulating gynaecological textbook for the more advanced student.

In spite of Professor Jeffcoate's comments on the subject, I do however think that a few well-chosen references would further enhance the value of this textbook.

J. DOMMISSE.

JOHNSTON'S SYNOPSIS OF REGIONAL ANATOMY.

Revised by ROGER WARWICK. Ninth Edition. Churchill. Pp. 429. *Price* 30*s*.

" The difficulty in painting a picture", Picasso once said, " is to know when to stop". This is obviously the case with many textbook revisors, for the short textbooks of surgery and pathology tend to grow to greater and greater proportions. Professor Warwick has not fallen into this trap, and has followed T. B. Johnston's example of keeping to a true synopsis. The fifth edition of the book contained 429 pages and this has not increased since.

The main reasons for revision of a book of this character are changes in terminology and anatomical thought. The revision of phraseology and addition of more lucid illustrations just brings new vigour to a publication. The section on the central nervous system is particularly good with simple informative diagrams, and the liberal use of italics and heavy type headings are very helpful in ordering one's thoughts about regional anatomy.

T. B. Johnston left two great memorials to Anatomy, namely, Gray's Anatomy, which he edited from 1930-1949, and the " Synopsis of Regional Anatomy", which was first published in 1921. The latter, we hope, will remain at Guy's and continue to offer the same help to students as it has done in the past.

The repeated editions of the book is a recommendation in itself, and I can only endorse this for the student who is revising his anatomy.

R. O. WELLER.

CLINICAL DIABETES MELLITUS.

Edited by M. ELLENBERG and H. RIFKIN. McGraw-Hill. Pp. 448. *Price* 104*s*. 6*d*.

The scope of this book is far wider than its title implies. The clinical manifestations of the disease and the complications associated with it, the therapy and the treatment are discussed in detail, but so also are the endocrine inter-relations, the experimental work that has been done in the laboratory, and the basic biochemistry of metabolism, both normal and diabetic. Indeed, there is so much detailed science that one feels that the claim of the editors that this is a book for physicians, surgeons, paediatricians and general practitioners is somewhat optimistic.

In their preface, the editors introduce the great variety of subjects bearing on diabetes, which are covered. This book is compiled from a series of articles by 43 authors, on diabetes mellitus which appeared in the New York State Journal of Medicine and each article constitutes a separate chapter with a comprehensive bibliography. The styles and standards of writing vary greatly, making the book somewhat disjointed. There are some very good sections—the chapters on lipid metabolism and the action of insulin and the classification of diabetes are particularly noteworthy. On the other hand, some sections are poor and it is unfortunate that the chapter on carbohydrate metabolism, the first in the book, is the worst. Not only does it not mention diabetes at all, but there are so many typographical errors in the text and the figures, that it is extremely difficult to follow.

In a book of this kind, it is only natural that the various authors should have written on their particular field, and consequently, there is at times an imbalance of emphasis with regard to the subject as a whole. There are chapters on the role of zinc and metals, and on the rare disease, lipoatrophic diabetes, whilst less than two pages are devoted to secondary diabetes due to endocrine disorders and steroid therapy. Moreover, there is no mention of any genetic influence on diabetes and a historical account of how we have arrived at our present concept of diabetes would have made for a more complete picture.

The book has been incompletely divided into sections. The first four chapters cover the biochemistry of carbohydrates, fat, proteins and metals. Then there are chapters on the hormones and their role in controlling glucose metabolism, and in experimental diabetes and one on the pathology of diabetes. The next few chapters cover clinical aspects of diabetes—diagnosis,

classification and diet and are followed by a section on insulin and oral hypoglycaemic agents. Pregnancy in diabetes and the management of diabetic children is covered and there is a detailed chapter on dentistry in diabetes. No less than eight chapters are devoted to the complications of diabetes, and here, even more than elsewhere, there is a considerable amount of repetition as the subject matter of the chapters overlaps. This constant repetition makes the book a good deal longer than it might otherwise have been.

The social aspects of diabetes, particularly the problems of employment in the U.S.A., are discussed and the book ends with an interesting and amusing "Where do we go from here?" chapter by Sir Charles Best.

To anyone particularly interested in diabetes, much of this book is worthwhile, but for the general physician, surgeon and G.P., a much simpler section on the biochemical basis of diabetes would be better.

MARGARET WHICHELOW.

MODERN TRENDS IN DENTAL SURGERY.

Edited by G. A. MORRANT. Butterworths. *Price* 60s. Pp. 242.

Following in the tradition set by previous volumes, the latest of the Modern Trends series, that on Dental Surgery, fulfils its function concisely and well. The aim of this volume is to " review within the space of a book of reasonable size, those fields of dentistry where there has been significant progress in fundamental concepts and method of treatment during the past ten years or so".

This book is designed to answer the experienced Practitioner wishing to review modern teaching and discover those fields in which there have been significant recent advances. It also aims at the teacher and specialist by enabling them rapidly to review progress and current ideas in other fields.

There are sixteen different topics considered, by fourteen authoritative contributors. The topics range from a modern concept of facial morphology, to an evaluation of modern methods in root canal treatment, and trends in fundamental dental research. Actual techniques are not considered, although some developments in modern materials and instruments are described. The selection covered is well balanced and amply supplied with references. Illustrations and plates are used to good advantage only where necessary and are of good quality.

The quality of printing and lay-out is high. The price is not high for the market for which the book is intended, however, senior students, who will undoubtedly also find this volume of great interest, may well be a little deterred.

This is a most interesting and well presented book and is to be thoroughly recommended.

ELIZABETH A. TILLER.

DIAGNOSIS IN CLINICAL OBSTETRICS.

by G. GORDON LENNON. John Wright, Pp. 336. *Price* 45*s*.

This is a good book with a novel and refreshing slant to the teaching of obstetrics. It does not pretend, and is not a complete textbook on the subject, but is rather a guide to the more practical side of the speciality. The author emphasises the knowledge which the doctor may gain at the bedside whilst mentioning such ancillary aids as he has found useful in his experience. The book is easily read with many interesting original descriptions and plates.

Particularly of value is the inclusion of a chapter by the Professor of Child Health at Bristol on the examination of the new-born child, a subject poorly dealt with in many textbooks and yet of increasing importance.

Some of the illustrations are not as self-explanatory as the author intended, and a few extra words here and there (or better illustrations) would make the book more self-sufficient.

The appendix at the end will enable you to be an R.O. without really thinking (which you rarely have time to do anyhow), and the book will be of value both to them and the hard-pressed man up for finals. It would, however, also serve as an excellent introduction to midwifery.

CYRIL CHANTLER.

SPORT

CRICKET

Having won the United Hospital Cup for the past four years, the 1st XI are attempting to go nap this season, and successfully opened their campaign with a convincing win by 155 runs over University College Hospital. Fine batting by Huins 49, Hambleton 49, Knott 35, and Walter 19, led to a score of 211. U.C.H. started disastrously 31—7, never really recovered, and were dismissed for 56—Walter 4—22, Miller 4—16, and Knott 2—7 doing the damage. With seven of last year's winning side left, this was a most encouraging performance and gives grounds for optimism against St. Mary's or London, still engaged in a replayed second round match.

In the annual Past v. Present match, Past won for the first time for 10 years, though they were well served by Cader, Sedgwick and Banks, all of whom genuinely qualify as Present players. Cook 66 and Pagliero 67, scored freely, and Past declared at 219—5, leaving Present 145 minutes to win. Despite a fine innings by Myall 39 (including 8 boundaries), supported by Biggs and MacGregor, Present succumbed to Banks (6 for 35).

In the match against Dulwich Hamlet, the feature was a knock by Hambleton of 67, which included 4 sixes. His attempt to hit a third successive six, however, proved his undoing, and Guy's just hung on for a draw, despite losing 3 wickets in the last over.

The Mote made a good start, but slid from 104 for 4 to 145 all out in the face of good bowling by Knott (4—45) and Davoodbuoy (3—32). Guy's were left 120 minutes to win, and soon fell behind the clock, but good hitting by Craft 30, Jones 210, and Davoodbuoy, 19 n.o., led to a win by 2 wickets off the fourth ball of the last over.

ROWING

The coxless four have recently been very active. In the Chiswick regatta on 25th May, drawn against Thames, the four were a canvass down after 1½ mins., but then threw the race away by steering straight into the bank. The boat was not damaged, but it was too late to catch Thames.

The following week, at Twickenham regatta, the four were soon a length down against Cygnet R.C. However, they rowed well to win eventually by two-thirds of a length. In the next heat, against Walton, Guy's again tried to row through from behind, but left the sprint too late and lost by a third of a length.

On Whit-Monday, at Willesden regatta, rowing three abreast, Guy's won their first race on a foul by Marlow R.C., who nearly forced the Hospital into a buoy. In the final, Guy's beat Thames, but were second to Barclay's Bank.

On Saturday, 8th June, competing at Walton regatta, the four were beaten by the winners of the event, Burway R.C., and were never really in the race.

Crew: Bow, P. D. Venning; 2, N. A. Watson; 3, D. K. C. Cooper; stroke, C. D. Hawes.

The Club will be represented at Henley Royal Regatta for only the fifth time in its long history—founded in 1844—by a coxless four in the Visitors' Challenge Cup. The crew will be racing on Wednesday, 3rd July, and welcome support at Henley—the time of racing and opponents will be announced when the draw has been made. Entries have also been made to Reading and Marlow regattas.

HOCKEY

At their A.G.M. on 28th May, Professor W. J. H. Butterfield was re-elected President for the coming year. D. C. E. Loader was elected Captain for next season, and other appointments included:—

Vice-Presidents: Mr. A. J. Bridge, Prof. R. D. Emslie, Dr. A. M. Hutton, Dr. G. Scott.

Vice-Captain: J. R. P. F. Liddiard.

Team Secretary: R. N. Pearson.

Fixture Secretary: A. Hirst.

The winning of the Junior Cup by the 2nd XI was suitably celebrated when the club repaired to dinner after the proceedings.

SWIMMING

In a water polo match against London Hospital, a scratch team played surprisingly well together. Siegle, particularly, had a very good game in goal and looked a very good acquisition. The service from goal to midfield was much quicker than in recent games, and this gave the forwards a chance to use their speed to gain openings, and not be caught because of the lack of a quick pass. The result, a win by 6 goals to 5, is very encouraging for the future, and the club naturally hope that more people will taken an interest in the sport, both actively and supporting.

In a three-day tour to Dublin, a United Hospitals team was captained by D. Barnes and included B. Valentine. The highlight of a successful visit occurred in the match against The Curragh, in which B. Valentine, swimming the last leg in the last relay, won to take the event and the match. Thus a strong side, including two internationals, was beaten, as were Trinity College, Dublin and University College, Dublin. In addition, the two water polo matches were also won and B. Valentine scored 5 goals.

Reports and Results

CRICKET

1st XI v. U.C.H.

(2nd Round, U.H. Cup)

At H.O.P. 12th June, 1963.

Guy's, having lost the toss, were, as is customery in cup games, asked to bat.

MacGregor and Huins began confidently against a steady attack and 46 were scored before MacGregor played too adventurously and was caught at the wicket. Myall's wicket fell soon afterwards, but when Hambleton joined Huins, Guy's began to assert their authority. Both were playing confidently, quick singles aiding a steady flow of runs, and the century was raised in even time.

However, just before lunch, Huins was dismissed, Silk run out and Guy's advantage removed. After lunch U.C.H. maintained their grip on the middle order batting and when Hambleton was sixth out at 138, the outlook was grim indeed. However, Knott and Walter restored respectability to the total in a delightful ninth wicket stand, both treating the opposition attack with disdain, exhibiting a wide range of textbook strokes as they had done at Hampstead two days previously.

A total of 211 was soon proved to be adequate for the opposition immediately faltered against hostile and accurate bowling by Walter and Miller, and were no match for bowling of this class. At 21 for 6, the end was in sight and when Knott was added to the attack three more wickets quickly fell, and a victory by 155 runs secured.

T. J. HUINS.

Guy's	
H. W. MacGregor, ct. Wragg, b. Imms	10
T. J. Huins, l.b.w. Watermeyer	49
R. W. T. Myall, ct. Paterson, b. Imms	1
G. Hambleton, ct. Paterson, b. Wragg	49
D. Silk, run out	2
S. Davoodbuoy, ct. Paterson, b. Coulson	0
J. Crafts, b. Imms	14
E. S. Price, b. Coulson	2
N. J. Knott, l.b.w. Wragg	35
M. Walter, ct. Johnson, b. Imms	19
D. Miller, not out	2
Extras	28
Total	211

U.C.H.	
Paterson, ct. Huins, b. Walter	0
Wragg, b. Walter	8
Gage, ct. and b. Walter	9
Eggleston, ct. Davoodbuoy, b. Miller	1
Owen-Smith, b. Miller	0
Thomas, b. Miller	0
Reynolds, l.b.w. Miller	0
Johnson, b. Knott	12
Coulson, b. Walter	6
Imms, not out	8
Watermever, b. Knott	1
Extras	11
Total	56

Guy's won by 155 Runs.

Bowling Analysis

	O.	M.	R.	W.
M. Walter	12	4	22	4
D. Miller	9	3	16	4
N. J. Knott	3	0	7	2

Guy's Past v. Present

At H.O.P. 15th June, 1963.

The Past won the toss and elected to bat; the wicket was a little green and rather wet following heavy rain the previous week. The Present XI scored an early success when Williams was well caught by MacGregor behind the wicket off Biggs, but Cook and Pagliero then batted extremely well until lunch. Cook was never really in serious trouble against a somewhat depleted Present attack, but Pagliero's luck was in on several occasions against Knott, who bowled very well.

After a very good lunch, both Cook and Pagliero went on to score 50s, Cook, having done so, hit several up into the heavens before being bowled by Davoodbuoy, attempting to clear the pavilion. Sedgewick joined Pagliero, who, having scored 50, also hit out, and was eventually caught by Crafts on the mid-wicket boundary, off Edgar. Cader, despite not having played previously this season, looked the good batsman he is—but having hit Davoodbuoy for one six to square leg, attempted to repeat the shot next ball and was bowled. Sievers came in, and immediately hit hard and well—Sedgewick in the meantime had made 28 runs, before being superbly caught by MacGregor low down to his right. Finally the Past declared at 4.15 having scored 219 for 5 wkts.

The Present were given a good start in their attempt to score this large total in the two-and-a-quarter hours remaining. MacGregor and Silk put on 36 in even time for the first

wicket. However, the later batsmen failed to continue the good work, apart from an excellent innings of 39 by Myall, scored in 30 minutes and containing more boundaries than anything else. Banks bowled very well, for the Past and the Present were eventually bowled out for 124, Banks having taken 6 for 35.

MIKE JONES.

Guy's Past.

G. W. Cook, b. Davoodbuoy	66
J. Williams, c. MacGregor, b. Biggs	1
M. Pagliero, c. Crafts, b. Edgar	67
J. Sedgewick, c. MacGregor, b. Knott	28
Z. Cader, b. Davoodbuoy	31
P. Sievers, not out	17
N. Glover, not out	2
Extras	7
Total, for 5 wickets	219

Guy's Present.

H. W. MacGregor, c. Banks, b. Cook	26
D. B. A. Silk, b. Cook	11
G. Hambleton, b. Banks	9
D. A. Biggs, c. Williams, b. Banks	23
R. W. T. Myall, b Cader	39
M. S. Jones, b. Banks	3
P. Griffiths, b. Banks	0
J. Crafts, not out	6
S. C. Davoodbuoy c. Pagliero, b. Banks	3
A. Edgar, run out	0
N. J. Knott, hit wkt, b. Banks	4
Extras	0
Total	124

Bowling, Banks, 6 for 35.
Result: Guy's Past won by 95 runs.

ATHLETICS

The 85th United Hospitals Athletic Club Championships were held at Motspur Park on the 12th and 15th June. In these Championships Guy's came a very close second to St. Thomas—there were only six points between the two hospitals—with Bart's third.

Of the finals held on Wednesday, 12th June, Guy's took maximum points in the 120 yds. hurdles. D. B. Waters won this event in a new record time of 14.8 secs., while A. Winskill survived a late challenge from D Williams (Royal Dental) to take second place.

Maximum points were also gained, on the Saturday, in the 440 yds hurdles and the high jump. In the 440 yards hurdles D. B. Waters and A. Winskill repeated their previous success to come in first and second, while in the high jump R. Morris took first place by jumping 6ft. 1in. and D. B. Waters came second with 5ft. 9in. Waters proved his great versatility later in the afternoon by coming second in the long jump, third in the triple jump and running in both relays. He is leaving this year—and will be sorely missed next season.

Other creditable performances came from A. Winskill, who came third in the 440 yds. in 52.1 secs. and sixth in the 100 yds. B. Hartley took third place in the javelin with 165ft 9in., J. Domaigne came third in the long jump, some seven inches behind D. Waters and R. Kerner and D. Osborn came second in the shot and discus respectively.

In the 880 yds. D. Cooper ran very well to come in fifth in 2 min. 1.3 secs. which beat his best time this season by about five seconds. Cooper also ran the 880 yds. leg of the medley relay, which also consisted of Winskill, Waters and Domaigne, all of whom ran well to give us fourth place.

In the 4 x 110 yds. relay (Morris, Waters, Domaigne and Winskill) we took third place in 45.4 secs.

One of the most interesting and, as it turned out, important events of the afternoon was the Tug-of-War. Guy's out-pulled Westminster in the first round and came across St. Thomas' in the semi-final. In the first pull St. Thomas' took about a minute to dispose of Guy's, but the second pull was a different story: egged on by their coach, Mr. J. Tomkinson, and by their supporters, Guy's after about two minutes were within six inches of winning, then something happened to the Guy's team and Thomas' were able just to lean over backwards pulling Guy's with them. Nevertheless, the Athletic Club thank both the Rugger Club and Mr. J. Tomkinson for pulling and coaching so gamely—there is always next year.

Apart from coaching the Tug-of-War team, M. J. S. Tomkinson, who is President of the Guy's Athletic Club, also entered for the Consultant's walk. Unfortunately (though he may have thought otherwise) no other consultant entered and so the race was called off.

This very enjoyable meeting was followed on the Monday night by the Annual U.H.A.C. dinner, at which Sir Arthur Porritt presided and presented the trophies. R. Morris received the high jump cup and Denis Waters received the 120 yds. and 440 yds. hurdles cups. In addition to these two, Waters was also awarded the British Medical Association's Cup for the best all-round performance. So ended a successful Championship and the Athletic Club would like to thank all those who took part, supported, organised and officiated.

JOHN HUNT.

U. H. Athletic Club Championships

At Motspur Park. 12th and 15th June, 1963.
100 yds. 6th, A. Winskill.
440 yds. 3rd, A. Winskill, 52.1 secs.
880 yds. 5th, D. Cooper, 2 min. 1.3 secs.
7th, P. Witting.
High Jump. 1st, R. Morris, 6ft. 1in.
2nd, D. B. Waters, 5ft. 9in.
Long Jump. 2nd, D. B. Waters, 21ft. 6¼ ins.
3rd, J. Domaigne, 20ft. 11¾ ins.
Triple Jump 3rd, D. B. Waters, 41ft. 2¼ ins.
Javelin. 3rd, B. Hartley, 165ft. 9 ins.
6th, D. Osborn, 136ft. 4ins.
Shot. 2nd, R. Kerner, 38ft. 7½ins.
Discus. 2nd, D. Osborn.
Hammer. 5th, B. Hartley, 68ft. 8ins.
Pole Vault. 5th, B. Hartley, 8ft. 6ins.
120 yds. Hurdles. 1st. D. B. Waters, 14.8 secs. (New Record).
2nd, A. Winskill, 15.7 secs.
440 yds. Hurdles. 1st. D. B. Waters, 55.6.
2nd, A. Winskill, 57.0.
Mile Medley Relay. 4th, D. Cooper, A. Winskill, J. Domaigne, D. B. Waters, 3 min. 45.0 secs.
4 x 110 yds Relay. 3rd, A. Winskill, R. Morris, D. Waters, J. Domaigne.
Result of Championships:
1st, St. Thomas', 76 pts.
2nd, Guy's, 69 pts.
3rd, Bart's, 58½ pts.

WATER POLO

v. London Hospital S.C. At Mile End Road Baths.
Result: Won 6—5.
Team: B. Valentine, D. Bartlett, J. Tripps, M. Joyce, J. Siegle. J. Holland.
Scorers: Valentine 4, Holland, Bartlett.

HOSPITAL INFORMATION

APPOINTMENTS VACANT

GUY'S HOSPITAL, S.E.1

Applications are invited for the posts of **Senior Registrar** and **Registrar** in the **Department of Diagnostic Radiology.** Duties of Registrar commence as soon as possible and of Senior Registrar on 1st November, 1963, with appointment in the first instance until 30th September, 1964. Forms of application are obtainable from, and should be lodged with, the Superintendent, Guy's Hospital, S.E.1., not later than **5th July, 1963.**

Applications are invited for the post of **Registrar in Thoracic Surgery** with duties from 1st October, 1963. Preference will be given to applicants holding the F.R.C.S. Forms of application are obtainable from, and should be lodged with, the Superintendent, Guy's Hospital, S.E.1., not later than **12th July, 1963.**

Applications are invited for the post of **Registrar in Child Psychiatry** with duties from 1st October, 1963. Appointment for one year in the first instance. Forms of application are obtainable from, and should be lodged with, the Superintendent, Guy's Hospital, S.E.1., not later than **12th July, 1963.**

GUY'S HOSPITAL AND SOUTH-EAST METROPOLITAN REGIONAL HOSPITAL BOARD

Applications are invited for the appointment of ***Registrar in Clinical Pathology*** at Guy's Hospital and in the Brighton and Lewes Group of Hospitals. The appointment to be made jointy, commences at Brighton on 1st October, 1963. The successful candidate will transfer to Guy's Hospital after a period of between six to eighteen months. Forms of application are obtainable from, and should be lodged with, the Superintendent, Guy's Hospital, S.E.1., not later than **5th July, 1963.**

GUY'S-MAUDSLEY NEUROSURGICAL UNIT

Applications are invited for the resident post of **Senior House Officer** for the six months commencing 1st August, 1963. The unit, which is housed in the Maudsley Hospital, serves both Guy's Hospital and the Bethlem Royal and the Maudsley Hospitals. Applications should be made by the 13th July, 1963, to L. H. W. Paine, House Governor and Secretary, Maudsley Hospital, Denmark Hill, S.E.5.

GUY'S HOSPITAL

HOUSE APPOINTMENTS SEPTEMBER 1st, 1963

Applications are invited for the following House Appointments at Guy's Hospital, due to begin on September 1st, 1963. Applicaitons giving choice of post and choice of Hospital, in order of preference, to be lodged with the Superintendent, **not later than July 23rd, 1963.**

Assistant House Surgeons 3
Pre-Registration
The appointment will be for six months, the first three months to be spent as A.H.S. During the second three months of the appointment candidates will either move to the post of Casualty Officer (Surgical) or will remain as A.H.S.
These vacancies will normally be open to Pre-Registration candidates applying for their first appointment and not to candidates seeking their second six months appointment.

Assistant House Physicians 3
Pre-Registration
The appointment will be for six months, the first three months to be spent as A.H.P. During the second three months of the appointment candidates will either move to the post of Casualty Officer (Medical) or will remain as A.H.P.
These vacancies will normally be open only to Pre-Registration candidates applying for their first appointment and not to candidates seeking their second six months appointment.

Casualty Officers 6
Pre-Registration

House Surgeons 2
1 Pre-Registration
1 Pre- or Post-Registration.

House Physicians 2
1 Pre-Registration
1 Pre- or Post-Registration

Resident Obstetricians 2
Post-Registration
(1 to commence 1.9.63; 1 to commence 1.11.63).

Throat and Ear House Surgeon 1
Pre-Registration

Dermatological House Physician .. 1
Post-Registration
(To commence 1.11.63).

Neurological House Physician 1
Post-Re-gistration

Children's House Physician 1
Pre-Registration
(2nd six months candidates only).

House Physician in Radiotherapy with duties with Dr. Bishop and Professor Butterfield 1
Pre-Registration

House Physicians in the Department of Psychological Medicine 2
S.H.O.
(To commence 1.10.63).

Resident Anaesthetists 2
1 Post-Registration
1 S.H.O.
The Medical Committee will also consider applications for posts at outer Hospitals as follows:—

BECKENHAM HOSPITAL
Casualty Officer 1
S.H.O.
(To commence 28.8.63)

HITHER GREEN HOSPITAL
House Physician in General Medicine and Infectious Diseases 1
Pre-Registration

JOYCE GREEN HOSPITAL
House Surgeon (General Duties) .. 1
Pre-Registration
House Physician (General Duties) .. 1
Pre-Registration

It is likely that married quarters will be available.

LEWISHAM HOSPITAL
House Surgeon to Mr. Cavendish .. 1
Pre-Registration
(To commence 27.9.63, locum from 24.8.63—8.9.63)
House Physician to Dr. Llewellyn-Smith 1
Pre-Registration
(To commence 16.9.63)

ORPINGTON HOSPITAL

House Surgeon (General Duties with Orthopaedics) 1
Pre-Registration

House Surgeon (General Duties with E.N.T.) 1
Pre-Registration

House Surgeon (General Duties with Physical Medicine) 1
Pre-Registration

QUEEN MARY'S HOSPITAL, SIDCUP

House Surgeon 1
Pre-Registration

House Physician 1
Pre-Registration

ST. JOHN'S HOSPITAL, LEWISHAM

Casualty Officer and Orthopaedic House Surgeon 1
Pre-Registration
(To commence 25.9.63)

NOTICE FOR PRE-REGISTRATION CANDIDATES

Pre-Registration candidates are reminded that the number of posts at Guy's is small compared with the number of students who are likely to qualify. Students applying at Guy's, therefore, are advised to consider applying for Pre-Registration posts elsewhere at the same time, in order to avoid delay in obtaining a post. A number of recognised posts is available in the South-East Region. Details of posts in this region and elsewhere in the country are available in the Medical School office.

Pre-Registration candidates who have completed six months in Medical or Surgical posts are reminded that they must now apply for Surgical and Medical posts respectively. A candidate who has completed his first six months in a specialty (surgical or medical) may not do another six months in a specialty but must seek a post in general medicine or general surgery as the case may be, according to University regulations.

P. J. HELLIWELL,
Acting Superintendent.

AWARDS

In the recent Essay competition for students and pre-registration doctors, organised by the Mental Health Research Fund, the second prize of £50 has been awarded to R. Kumar. The subject of his essay was "Discuss the significance of personality in the genesis and symptomatology of psychiatric disorders".

PERSONAL

Special rates for Guy's Staff, Students, Nurses and Subscribers to the Gazette. 5 words 10s. 6d. 15 words 21s. 0d. Box Numbers 1s. extra.

Ordinary rates 15s. 0d. 5 words. Box Numbers 1s. extra.

FOR SALE

1936 Lancia Astura 3 litre V.8. 4 door Farina, mechanically sound, £250. Crowther, Tatsfield 326. Box No. 339.

WANTED

Dental Nurse required for West End Private Practice commencing August/September, middle 20's. S.R.N. advantage. Box No. 340.

CHANGES OF ADDRESS

Dr. P. O'Gorman, 35, Avondale Road, Bromley Kent.

Dr. J. O. Ojukwu, M.D., 244, West Princess Street, Glasgow, E.4, Scotland.

Dr. K. E. F. Hobbs, The University of Durham, Kings College, Dept. of Anatomy, The Medical School, Newcastle upon Tyne 1.

Dr. J. Forsythe, 20, Scotts Lane, Shortlands, Bromley, Kent.

Mr. E. M. Bearn, B.D.S., L.D.S., R.C.S., 4, Hampshire Terrace, Portsmouth.

L. G. Yendoll, Surgeon Captain, R.N., The Green, Duddon, Tarporley, Cheshire.

Dr. M. Robson 37, Springfield Close, Bedhampton, Havant, Hants.

Dr. A. M. Kingdon, No. 7, O.M.Q., Royal Air Force, Wroughton, Nr. Swindon, Wiltshire

Dr. R C. Greenberg, 79, Bow Lane, N.12.

Mr. S. P. Robertson, L.D.S., R.C.S., 133, Rushey Green, Catford, S.E.6.

Mr. A. N. du Piessis, L.D.S., R.C.S., 56, High Street, Wootton Bassett, Wilts.

Dr. J. A. Loeb, 272, Pinehurst Drive, Oakville, Ontario.

Dr. and Mrs. J. C. Carreras, "Inglewood", The Avenue, Bushey, Herts.

Dr. J. G. Miller, St. Mary's, Manor Road, Mundesley, Norwich.

Dr. P. J. McGregor, Little Gain's Farm, The Frith, Aldington, Ashford, Kent.

Dr. K. G. Somers-DeHaney, 4, Barrington Drive, Havendale, Kingston 8, Jamaica, West Indies.

Dr. R. Terry, The Surgery, Kingstone, Clehonger, Herefordshire.

BIRTHS

HERD.—To Margaret (née Oxburgh) B.D.S., L.D.S., and Brian Herd, M.A., M.B., B.S., D.R.C.O.G., a son, Andrew Edmund, on 4th May.

KING.—To Elspeth and Michael King, a daughter, Fiona Almyrie, at the Whittington Hospital on May 1st.

LLOYD-EDWARDS.—To Jenny (née Taylor) and Adrian, a daughter, Sian Mary on 11th May, 1963.

MEMBREY.—To Priscilla (née Atkinson) S.R.N. and Anthony Membrey, M.B.B.S, (1955), a daughter, Sophie, on April 26th, at 10, Linden Gardens, sister for David and James.

PRING.—To Diane (née Schenel) S.R.N. and Colin Pring, a daughter, Deborah, on May 26th, 1963. Sister for Anthony.

MARRIAGES

CARROLL—GIBSON.—On May 18th, at Gosforth, Northumberland, John Desmond Carroll, to Judith Suzanne Gibson.

BULL—DEAN.—On May 18th, at Battersea, John Courtney Bull, M.B., B.S., to Ivy Dean, S.R.N

BLAKE—CUTHBERT.—On May 11th, at Stirling, Henry V. Blake, M.B., B.S., to Katherine E. Cuthbert, M.R.C.P. Ed.

GUY'S HOSPITAL GAZETTE

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Editors *W. G. Reeves*
I. A. Baker

Sports Correspondent *E. Tiller*

Guy's Hospital, London

PASSIM

Research on View

When thinking of the possibilities of research work as a career one may be forgiven for reviving the image of the introverted analyst pottering in his back-room. Yet apart from private discussion, formal symposia and publication in journals, research is chiefly a succession of problems fought out between the enquirer and his tools of experiment. Recently the Guy's Science Club has been endeavouring to promote the exchange of ideas and trends in research conducted within the Hospital, but many not immediately involved may pass their years of training without more than an inkling of the work going on in the various corners of each department.

Thus the Medical School Open Day of 2nd July was a welcome event, although alas a rare one. Here a large section of current research was exhibited with its guardians at hand to explain the finer points. Among the visitors were those representing some of the beneficiaries who by their financial aid enable much of such work to be fulfilled. Others were interested students of all grades who welcomed this chance—perhaps unique in their individual career—to learn of some of the recent developments taking place at Guy's.

We hope that in the near future we may witness yet another of these highly successful occasions, although the amount of preparation involved must demand a considerable amount of time, presumably sacrificed from that spent on the more active and productive process of discovery.

Clinical Trials

Increasingly the clinician has found it necessary to analyse and justify his treatment and service to patients by carrying out clinical trials. The need for experimentation and the documentation of clinical observations in the advancement and communication of treatment and medical knowledge; the selling pressure of commercial enterprises and the budgeting of a government, are the more important factors which have led to the frequent use of these more precise methods of enquiry. Modern antibiotics, sulphonamides and anti-tuberculous drugs have been accepted and used by the profession against a background of detailed investigations and trials, to mention but a few examples.

For some decades now both medical and dental students have been asked to co-operate in trials run by consultants and registrars and by research workers, and occasionally by direct invitation from drug houses. Those involved act as members of experimental and control groups and are required to help in the collection of data by simple laboratory tests and clinical observations. It has been customary for some measure of financial reward to be given to those participating and this has been, to many, a much appreciated attraction. Frequently, though, this has been the only return, and the opportunity for other rewards has been missed.

We are proudly not one of the six London medical schools which C. R. Lowe (*Lancet*, 1963) found gave no instruction in the use of statistics. He found that a common difficulty of academic staffs arose in making the use of statistics interesting enough to capture the attention of the student body. Here, at Guy's, physiological and pharmacological experiments are used to give a grounding in the simple employment and interpretation of statistics. The majority of medical and dental students, however, have their interests focused on their clinical years and it would be further rewarding if additional instruction in statistical matters could be given during this period.

Further trials involve the postulation of ideas and concepts and the planning of methods of enquiry calls for the choice of relevant factors and the acknowledgment and exclusion of unrelated variants. Ethical demands often have to be considered. Eventually, results and conclusions allow for discussion and further thought. All these phases of clinical trials offer a considerable opportunity for attractive instruction into the principles of biological and clinical investigation.

The vast world of biological literature continually presents figures, graphs and deductions. Every newly-qualified houseman quickly experiences the colourful persuasions of pharmaceutical pamphlets. Claims with figures in a different manner are made at meetings and conferences involving all members of the profession. Within this environment, the need for simple, reasoned instruction in the use of clinical trials is required.

The use and comprehension of statistics and trials is remote and unimportant to some, while others become too dependent. In between lies a balance, the significance of which Dr. John Gregory, Professor of Medicine in the University of Edinburgh, grasped as early as 1772.

> "You may perceive that I do not recommend the study of mathematics as leading directly to any important discoveries in medicine, but from a persuasion that, besides its subserviency to natural philosophy, it has a tendency to quicken the invention, to open the mind, and to accustom it to a habit of close and accurate reasoning. But let me caution you against entering too deeply into this most bewitching of all studies, which will probably divert your attention from the main ends of your profession. Let me also desire you to guard against it leading you to a disposition of scepticism, and suspense of judgement in subjects that do not admit of mathematical evidence. Remember that habits of nice discrimination, though frequently useful, are sometimes incompatible with the business of common life, and of your profession."

Professor Payling Wright, who has been the Sir William Dunn professor of pathology at Guy's since 1934, will be giving his retiring lecture at 5 p.m. on Thursday, 25th July, in the anatomy theatre. His subject will be "*The Future of Pathology in University Medicine*", and the chair will be taken by Mr. R. J. Cann.

GUY'S DIARY

JULY

EXHIBITION. *Fractures of the Spine.*

15th	M.	1.00	Mr. SALMON. Clinical Lecture. *Malignant Disease of the Maxilla.*
16th	T.	1.00	Dr. MOYNAHAN. Clinical Lecture. *Management of the Skin in Infancy and Childhood.*
18th	T.	5.00	Mr. Peter SCHURR. *Neurosurgical Round.* Clinical Theatre.
18th	T.	1.00	Mr. GLOVER. Clinical Lecture.
19th	F.	1.00	Dr. G. M. KOMROWER, Lecturer in Child Health at Manchester University. Clinical Lecture. *Galactosaemia.*
25th	Th.	5.00	Professor PAYLING WRIGHT. Lecture in the Anatomy Theatre. *"The Future of Pathology in University Medicine."* The Chair will be taken by Mr. R. J. CANN.
25th	Th.	1.00	Mr. WASS. Clinical Lecture. *Undescended Testicles.*
26th	F.	1.00	Mr. BRAIN. Clinical Lecture. *Achalasia.*
27th	S.	10.00	*Clinico-Pathological Conference.* Clinical Theatre.

PUPILS PHYSICAL SOCIETY

The Annual General Meeting of the Society will be held at 5 p.m. on Thursday, July 18th, in the Quiet Games Room on the second floor of the Students' Club. Plans for next year will be discussed and next year's Committee will be elected. All students interested in the Society, particularly those still in their first clinical year, will be very welcome. Anyone who is unable to attend who wishes to make a suggestion, nominate a committee member or serve on next year's committee, should contact the Secretary, A. S. Russell.

REPRINTS

Reprints of the following articles recently published in the *Gazette* are now available:—

Bermondsey and Southwark, IV., *" Life and Health "*, by Roger Blaney.

A Scientific Background to Clinical Medicine:—

1. *Fundamental Genetics* by B. J. Rickard.
2. *The Biochemistry of Genes* by W. L. G. Gent.
3. *Human Chromosomes and their Abnormalities,* by Janet Northfield.
4. *Inborn Errors of Metabolism* by P. F. Benson.
5. *Congenital Abnormalities* by R. G. Spector.
6. *Sex Determination and Development,* by J. L. Hamerton.
7. *Statistics in Clinical Medicine,* by C. P. Wendell-Smith.

These and subsequent reprints in this series, may be obtained, price 1s. each, from the Manager, Gazette Office.

Statistics in Clinical Medicine

BY C. P. WENDELL-SMITH.

Associate Professor of Anatomy, University of New South Wales.

A statistical analysis, properly conducted, is a delicate dissection of uncertainties, a surgery of suppositions. The surgeon must guard carefully against false incisions with his scalpel. Very often he has to sew up the patient as inoperable.

Moroney.

In many new medical schools there is a steady inculcation of statistics and scientific method throughout the course. The student attending these schools is fortunate, for many of us make our first contact with the subjects as postgraduates when we are perhaps more appreciative but less receptive. Statistics is often regarded as a subject for which extended mathematical treatment is always required. This is certainly not so, for not only is simplicity of treatment generally proportional to the simplicity of the questions being asked, but there are many questions which can be answered without any calculations at all.

In our work it is rarely possible to examine a complete population—the totality of all possible observations of a certain kind. We have to be content with examining a sample—a smaller collection of such observations—and making inferences from sample to population. This inferential step comes so naturally to us that we are often unaware that it has been taken. If we observe that four patients out of a sample of 10 have responded to drug X, we may estimate that 40 per cent of all similar cases—the population—would have responded to drug X under similar conditions. Yet, due to the vagaries of chance, the result of four out of 10 responding may represent a run of good luck and the point estimate of 40 per cent be unduly optimistic, or it may represent a run of bad luck and the estimate be correspondingly pessimistic. It is in dealing with uncertainties of this kind that statistics, the branch of scientific method that deals with phenomena which can be described by count or measurement, comes into its own.

Statistics concerns itself with both the description and the analysis of data. Our example would be described by the sample size ($n=10$), the sum of (Σ) observations in that sample exhibiting a certain attribute, in this case response to drug X, ($\Sigma x=4$) and the proportion (p) or mean ($\bar{x}$) exhibiting that attribute (p or $\bar{x}=\Sigma x/n=0.4=40\%$).

Entering the accompanying table, to be found on pages 347-8, with $p=40\%$ and $n=10$ we find the figure 12 – 74% This means that we can be confident, within certain limits, that the percentage of the population which would respond to drug X lies between 12% and 74%. With sample size 10 and proportion 40% we have no more certainty than this. The population percentage may lie anywhere between these values. The limits of our confidence are that in making such statements we shall be correct 95 times out of 100—a standard usually accepted in biological work.

The point may be made more clearly by considering a similar sample of 10 patients in which none responded to drug Y. Then the confidence interval for the sampled population would be 0—31%. Although none of the patients in the sample responded to drug Y, yet the possibility remains that up to 31% of the totality of such patients would respond. The drug could not legitimately be said to be without effect, though its effect could be said to be without "significance" in the statistical sense.

The significance of "significance" requires some consideration. Suppose that we believe that drug Z might be effective in a certain group of patients. The classical method of dealing with this would have four logical steps:

1. *Frame a null hypothesis—that the drug has no effect—before trying it.*
2. *Try the drug and record the results.*
3. *Test the hypothesis.*
4. *Make a decision in light of the results of the test.*

Suppose that we set up a null hypothesis, try the drug and find that one out of 10 patients respond to it; testing the hypothesis would entail calculating a quantity such as Student's t and comparing its value with standard tables. For this binomial problem:

$$t=\frac{p(n-1)}{n(1-p)}=0.316$$

When compared with values in standard tables of t this proves low and quite likely to have arisen by chance, i.e. it is not statistically significant and the null hypothesis cannot be rejected. (Conversely a result unlikely to have arisen by chance is said to be statistically significant. The level of unlikelihood or significance, 5%, is the complement of the accepted level of confidence *v.sup.*). This example brings out some of the disadvantages of tests of hypothesis or significance, quite apart from the calculation involved. The first is that, theoretically, the null hypothesis should be set up before the trial is made. If this is not done the null hypothesis, and its alternative, may be affected by the very data which are being used to test them. Data may be selected for testing because they look unusual. They are no longer randomly selected. Under these circumstances the risk of erroneously rejecting the null hypothesis when in fact it is correct, is higher than the test of significance would indicate—and higher by an unmeasurable amount! As a corollary of this, a test of significance

should be applied once only to a particular set of data. It is theoretically unsound to extend tested data in the hope of increasing their significance or for some other reason. If the decision to extend a series is made on the results of an initial set of data, prior knowledge introduces bias into future significance tests and makes sequential tests, rather more complex, appropriate. For tests of significance to be appropriate in this context, the initial data should be set aside, a null hypothesis framed with regard to them and a new series started. With rare cases and similar circumstances an extensive new series may not be possible and the fruits of industry, ingenuity or serendipity may be lost. Fortunately, there are methods available which have none of these disadvantages. With binomial estimation methods there is no need to frame a hypothesis in advance, data can be inspected and evaluated as it accumulates and there is no calculation involved (except on the part of the compiler of the table whose head still reels from the task). As we have seen, estimates of the population proportion are made from that of the sample, due allowance being made for sampling variation. To apply this method to our example :

Number of patients on drug Z	...	10
Number of patients responding	...	1
Percentage of patients responding	...	10%
95% confidence interval	... ...	0–45%

Since the 95% confidence interval includes 0 we cannot exclude the possibility, at this level, that the percentage of the population which would respond to drug Z is so low as to be negligible (nearer 0 than 1%). Effectively the same result as by the t–test but without calculation and with the possibility of extending the series!

Suppose that we try 10 further cases and no more respond :

Number of patients on drug Z	...	20
Number of patients responding	...	1
Percentage of patients responding	...	5%
95% confidence interval	... ...	0–25%

The general conclusion is similar but the reduced interval (0–25% instead of 0–45%) increases the likelihood that a statement of negligible response would be correct.

If, however, one of the 10 further cases responds :

Number of patients on drug Z	...	20
Number of patients responding	...	2
Percentage of patients responding	...	10%
95% confidence interval	... ...	1–31%

Since the interval does not include 0 we can state with 95% confidence that the drug has some significant effect, and at least 1% (and at most 31%) of the population would respond to drug Z. The series can be further extended at the whim of the investigator until the interval has been narrowed to limits which satisfy him or until the series runs out —and all without calculation.

95% CONFIDENCE INTERVALS FOR THE BINOMIAL DISTRIBUTION.

p denotes the percentage observed in a sample size **n**.
The two-sided 95% intervals are expressed as percentages

p \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
0	0-98	0-84	0-71	0-60	0-52	0-46	0-41	0-37	0-34	0-31	0-28	0-26	0-25	0-23	0-22	0-21	0-20	0-19	0-18
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0-26
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0-30	0-29	0-27	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	0-34	0-32	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	0-38	0-36	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	0-41	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	0-45	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	0-48	-	-	-	-	-	-	-	-	1-35	1-33
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1-36	-	-
13	-	-	-	-	-	-	-	0-53	-	-	-	-	-	-	2-40	2-38	-	-	-
14	-	-	-	-	-	-	0-58	-	-	-	-	-	-	2-43	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	2-45	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3-40
17	-	-	-	-	-	0-64	-	-	-	-	-	2-48	-	-	-	-	-	4-41	-
18	-	-	-	-	-	-	-	-	-	-	2-52	-	-	-	-	-	4-43	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4-46	-	-	-
20	-	-	-	-	1-72	-	-	-	-	3-56	-	-	-	-	4-48	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	5-51	-	-	-	-	6-46
22	-	-	-	-	-	-	-	-	3-60	-	-	-	-	-	-	-	-	6-48	-
23	-	-	-	-	-	-	-	-	-	-	-	-	5-54	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7-50	-	-
25	-	-	-	1-81	-	-	-	3-65	-	-	-	6-57	-	-	-	7-52	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9-51
27	-	-	-	-	-	-	-	-	-	-	6-61	-	-	-	8-55	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10-53	-
29	-	-	-	-	-	-	4-71	-	-	-	-	-	-	8-58	-	-	10-56	-	-
30	-	-	-	-	-	-	-	-	-	7-65	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	9-61	-	-	11-59	-	-	-
32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13-57
33	-	-	1-91	-	-	4-78	-	-	7-70	-	-	10-65	-	-	12-62	-	-	13-59	-
34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14-62	-	-
36	-	-	-	-	-	-	-	-	-	-	11-69	-	-	13-65	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16-62
38	-	-	-	-	-	-	-	8-76	-	-	-	-	14-68	-	-	15-65	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17-64	-
40	-	-	-	-	5-85	-	-	-	-	12-74	-	-	-	-	16-68	-	-	-	-
41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18-67	-	-
42	-	-	-	-	-	-	-	-	-	-	-	15-72	-	-	-	-	-	-	20-67
43	-	-	-	-	-	-	10-82	-	-	-	-	-	-	18-71	-	-	-	-	-
44	-	-	-	-	-	-	-	-	14-79	-	-	-	-	-	-	20-70	-	22-69	-
45	-	-	-	-	-	-	-	-	-	-	17-77	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-	19-75	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21-73	-	23-72	-	24-71
48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
50	-	1-99	-	7-93	-	12-88	-	16-84	-	19-81	-	21-79	-	23-77	-	25-75	-	26-74	-

Enter the table with **p** = *nearest whole percentage; if* **p** *each limit from 100. Example: attribute observed 15 corresponding to 59—96%. Linear interpolation with respect use 1/***n** *as the argument. Example: attribute observed 40*

95% CONFIDENCE INTERVALS FOR THE BINOMIAL DISTRIBUTION.

p denotes the percentage observed in a sample size **n**.
The two-sided 95% intervals are expressed as percentages.

20	22	24	26	28	30	35	40	45	50	60	80	100	150	250	500	1000	2000	5000	50,000
0-17	0-15	0-14	0-13	0-12	0-12	0-10	0-9	0-8	0-7	0-6	0-5	0-4	0-2	0-1	0-1	0	0	0	0
-	-	-	-	-	-	-	-	-	-	-	0-7	0-5	0-4	0-3	0-2	0-2	1-2	1	1
-	-	-	-	-	-	-	-	0-12	0-11	0-9	-	0-7	0-6	1-5	1-4	1-3	1-3	2	2
-	-	-	-	-	0-17	0-15	0-13	-	-	0-12	0-9	1-8	1-7	1-6	2-5	2-4	2-4	3-4	3
-	-	0-21	0-20	0-18	-	-	-	1-15	0-14	-	1-11	1-10	1-8	2-7	2-6	3-5	3-5	3-5	4
0-25	0-23	-	-	-	-	-	1-17	-	-	1-14	1-12	2-11	2-10	3-9	3-7	4-7	4-6	4-6	5
-	-	-	-	-	-	1-19	-	-	1-17	-	2-14	2-12	3-11	3-10	4-8	5-8	5-7	5-7	6
-	-	-	-	1-23	1-22	-	-	1-19	-	2-16	-	3-14	3-12	4-11	5-10	6-9	6-8	6-8	7
-	-	1-27	1-25	-	-	-	2-20	-	2-19	3-18	3-16	4-15	4-14	5-12	6-11	6-10	7-9	7-9	8
-	1-29	-	-	-	-	2-23	-	2-21	-	-	4-17	4-16	5-15	6-13	7-12	7-11	8-10	8-10	9
1-31	-	-	-	-	2-27	-	3-24	-	3-22	4-21	4-19	5-18	6-16	7-14	8-13	8-12	9-11	9-11	10
-	-	-	-	2-28	-	3-27	-	4-24	-	-	5-20	5-19	6-17	7-16	8-14	9-13	10-12	10-12	11
-	-	-	2-30	-	-	-	-	-	5-24	5-23	-	6-20	7-18	8-17	9-15	10-14	11-14	11-13	12
-	-	3-32	-	-	4-31	-	4-27	5-27	-	6-25	6-22	7-21	8-19	9-18	10-16	11-15	12-15	12-14	13
-	3-35	-	-	4-33	-	5-30	-	-	6-27	-	7-23	8-22	9-20	10-19	11-17	12-16	13-16	13-15	14
3-38	-	-	4-35	-	-	-	6-30	-	-	7-27	8-25	9-24	10-22	10-20	12-18	13-17	13-17	14-16	15
-	-	-	-	-	-	-	-	7-29	7-29	-	9-26	9-25	11-23	11-21	13-20	14-18	14-18	15-17	16
-	-	5-37	-	-	6-35	7-34	-	-	-	8-29	-	10-26	11-24	12-22	14-21	15-19	15-19	16-18	17
-	5-40	-	-	6-37	-	-	7-33	8-32	9-31	10-30	10-28	11-27	12-25	13-23	15-22	16-21	16-20	17-19	18
-	-	-	7-39	-	-	-	-	-	-	-	11-29	12-28	13-26	14-24	16-23	17-22	17-21	18-20	19
6-44	-	-	-	-	8-39	8-37	9-36	10-35	10-34	11-32	12-30	13-29	14-27	15-26	17-24	18-23	18-22	19-21	20
-	-	7-42	-	8-41	-	-	-	-	-	-	13-32	14-30	15-28	16-27	18-25	19-24	19-23	20-22	21
-	-	-	-	-	-	-	-	11-37	12-36	12-34	-	14-31	16-29	17-28	18-26	19-25	20-24	21-23	22
-	8-45	-	9-44	-	10-43	10-40	11-39	-	-	13-36	14-33	15-32	16-31	18-29	19-27	20-26	21-25	22-24	23
-	-	-	-	-	-	-	-	13-40	13-38	-	15-35	16-33	17-32	19-30	20-28	21-27	22-26	23-25	24
9-49	-	10-47	-	11-45	-	-	13-41	-	-	15-38	16-36	17-35	18-33	20-31	21-29	22-28	23-27	24-26	25
-	-	-	-	-	-	12-43	-	-	15-41	-	17-37	18-36	19-34	20-32	22-30	23-29	24-28	25-27	26
-	11-50	-	12-48	-	12-46	-	-	15-42	-	16-40	-	19-37	20-35	21-33	23-31	24-30	25-29	26-28	27
-	-	-	-	-	-	-	15-44	-	16-43	17-42	18-39	19-38	21-36	22-34	24-32	25-31	26-30	27-29	28
-	-	13-51	-	13-49	-	15-46	-	16-44	-	-	19-40	20-39	22-37	23-35	25-33	26-32	27-31	28-30	29
12-54	-	-	-	-	15-50	-	17-47	-	18-44	19-43	20-41	21-40	23-38	24-36	26-34	27-33	28-32	29-31	30
-	-	-	14-52	-	-	17-49	-	18-47	-	-	21-43	22-41	24-39	25-37	27-35	28-34	29-33	30-32	31
-	14-55	-	-	16-52	-	-	-	-	20-46	20-45	-	23-42	25-40	26-38	28-36	29-35	30-34	31-33	32
-	-	16-55	-	-	17-53	-	19-49	20-49	-	22-47	22-44	24-43	26-41	27-39	29-37	30-36	31-35	32-34	33
-	-	-	-	-	-	19-52	-	-	21-48	-	24-45	25-44	26-42	28-40	30-38	31-37	32-36	33-35	34
15-59	-	-	17-56	-	-	-	21-52	-	-	23-49	25-46	26-45	27-43	29-41	31-39	32-38	33-37	34-36	35
-	17-59	-	-	19-56	-	-	-	22-51	23-50	-	26-48	27-46	28-44	30-42	32-40	33-39	34-38	35-37	36
-	-	-	-	-	20-56	21-55	-	-	-	25-50	-	28-47	29-45	31-43	33-41	34-40	35-39	36-38	37
-	-	19-59	20-59	-	-	-	23-54	24-54	25-53	26-52	27-49	28-48	30-46	32-44	34-42	35-41	36-40	37-39	38
-	-	-	-	22-59	-	-	-	-	-	-	28-50	29-49	31-47	33-45	35-43	36-42	37-41	38-40	39
19-64	-	-	-	-	23-60	24-58	25-57	26-56	27-55	28-53	29-52	30-50	32-48	34-46	36-44	37-43	38-42	39-41	40
-	21-64	-	-	-	-	-	-	-	-	-	30-53	31-51	33-49	35-47	37-45	38-44	39-43	40-42	41
-	-	22-63	23-63	-	-	-	-	28-58	28-57	29-55	-	32-52	34-50	36-48	38-46	39-45	40-44	41-43	42
-	-	-	-	25-63	25-63	26-61	27-59	-	-	31-57	32-54	33-53	35-51	37-49	39-47	40-46	41-45	42-44	43
-	-	-	-	-	-	-	-	30-60	30-59	-	33-55	34-54	36-52	38-50	40-48	41-47	42-46	43-45	44
23-68	24-68	-	-	-	-	-	29-61	-	-	32-58	34-56	35-55	37-53	39-51	41-49	42-48	43-47	44-46	45
-	-	26-67	27-67	28-66	-	29-63	-	-	32-61	-	35-58	36-53	38-54	40-52	42-50	43-49	44-48	45-47	46
-	-	-	-	-	28-66	-	-	32-62	-	34-60	-	37-57	39-55	41-53	43-51	44-50	45-49	46-48	47
-	-	-	-	-	-	-	32-64	-	34-63	-	36-59	38-58	40-56	42-54	44-52	45-51	46-50	47-49	48
-	-	-	-	-	-	31-66	-	34-64	-	35-62	37-60	39-59	41-57	43-55	45-53	46-52	47-51	48-50	49
27-73	28-72	29-71	30-70	31-69	31-69	-	34-66	-	36-64	37-63	39-61	40-60	42-58	44-56	46-54	47-53	48-52	49-51	50

exceeds 50% enter the table with $\mathbf{p}' = 100 - \mathbf{p}$ *and subtract*
times in sample size 18, $\mathbf{p}' = 83\%$, $\mathbf{p}' = 17\%$, *interval 4.41%*
to **n** *will generally be sufficient ; for more accurate results*
times in sample size 125, $\mathbf{p} = 32\%$, *interval is 24—41%.*

The use of the table is restricted to binomial data in which the possession or lack of an attribute distinguishes two alternative classes. It is worth pointing out, however, that other types of data can be reduced to this form by defining the attribute to be possessed or lacked. For example, measurement data on heights of patients might be reduced to two alternative categories : (1) under 6ft, (2) 6ft. and over. The proportion of the sample in one or other category could then be entered in the table.

Estimation methods certainly warrant more use in clinical medicine than they have hitherto received. To paraphrase *Punch* :

I divide
the world
into two main classes—
those who perpetually
divide
the world
into two main classes;
and those who don't.
I dare say
the first
are the worst—
but join them.

In this aperitif there are many aspects of statistics which have received no mention. The reader whose appetite is whetted might read Moroney's book in the Pelican series (Moroney 1956) or the book by Wallis and Roberts (1957). For a short practical guide to significance testing for comparing two groups, see a previous paper (Wendell-Smith, 1960). This may prove useful but unpalatable for it was written for a restricted group and purpose. Sooner or later most of us turn to Fisher (1954) or Snedecor (1956). The table of confidence intervals was calculated from the formula in Hald (1952).

REFERENCES.

FISHER, R. A. (1954) *Statistical Methods for Research Workers*, 12th ed., Oliver and Boyd, Edinburgh.

HALD, A. (1952), *Statistical Theory with Engineering Applications*, p.698. Wiley, New York.

MORONEY, M. J. (1956). *Facts from Figures*. 3rd ed. Penguin, Harmondsworth.

SNEDECOR, G. W. (1956). *Statistical Methods*. 5th ed., Iowa State College Press.

WALLIS, W. A. AND ROBERTS, H. V. (1957). *Statistics*: A New Approach. Methuen, London.

WENDELL-SMITH, C. P. (1960). Objective film testing, *Med. biol.* 111, 10, 110-116.

CRITICISM

Photographic Exhibition— 1963

by C. ENGEL

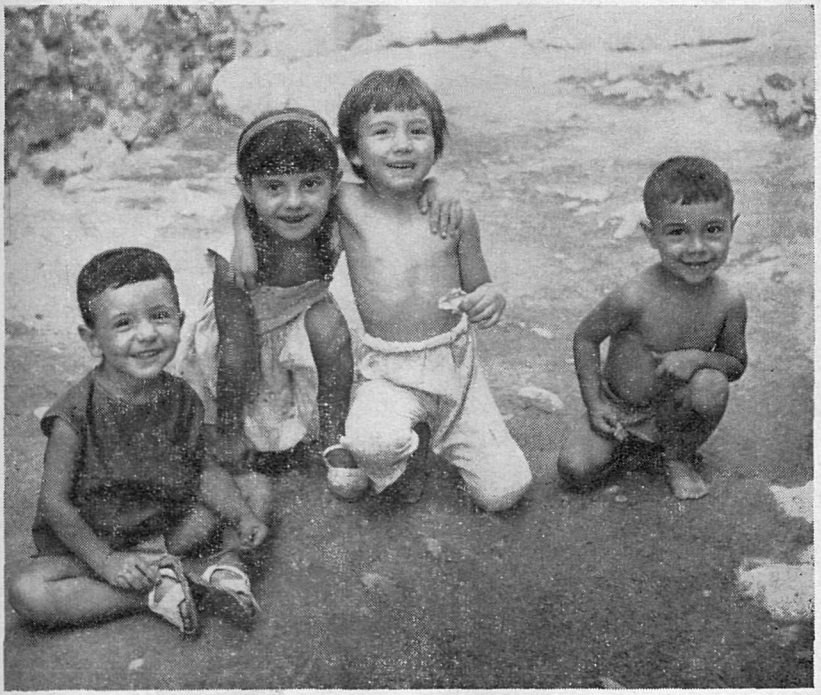


Figure 1 *Martin Walker*

This year's display has shown many more interesting and well-planned examples of work than in past exhibitions; fewer snapshots and more conscious observation followed by photographic interpretation.

At times it was a little difficult to separate the prints belonging to one exhibitor from those contributed by others. However, there was this year some attempt to show complete panels of prints by individual exhibitors, and one panel was devoted to pictures of Guy's and its environment (Fig. 2).

Martin Walker showed a good sense of observation, and some of his faces and places were excellent. Others could possibly be improved upon by judicious selection during printing, which might make the observation even more personal and alive.

Stephen Gregson showed a number of experiments in portraiture, movement with silhouettes, table-tops and "available light", as in his "Studio 51". However, to disregard careful technique and the best possible viewpoint is to court disappointment.

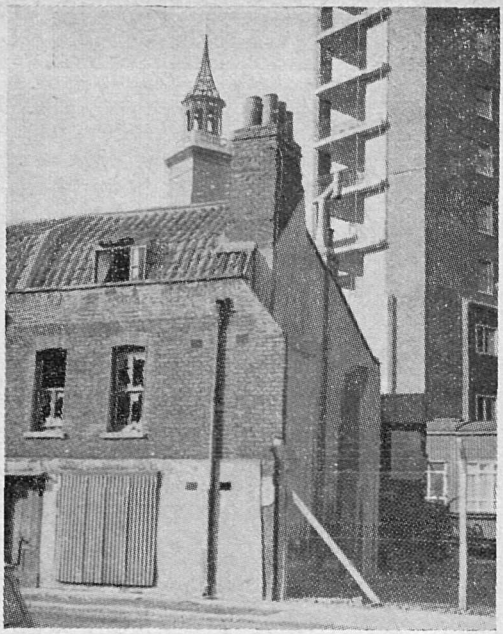
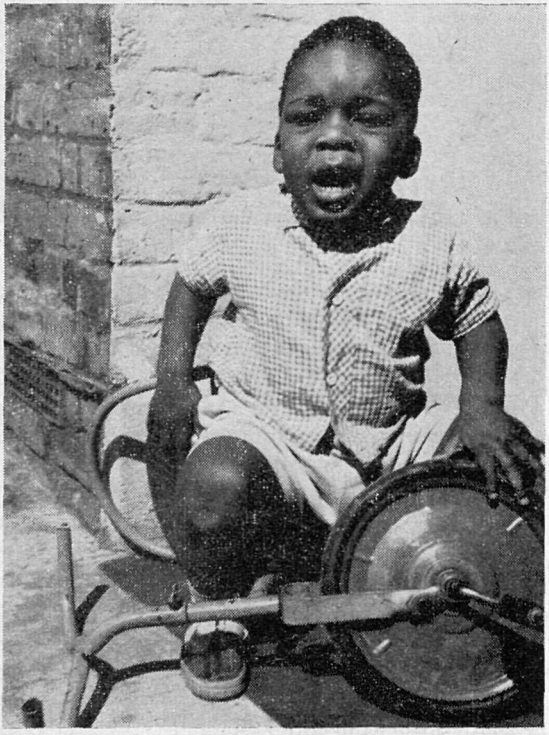


Figure 2

Stephen Gregson



Len Garrison

Figure 3

Simon Wood clearly is an advanced worker whose prints showed progress from the snap-shot-recorded-as-seen type of photograph to examples where the sense of pattern in shapes and lighting was well developed. His work with people is still open to some improvement where a more careful choice of viewpoint will help him to express what he sees more successfully. Figure 4 illustrates how a view from a somewhat lower position and from a little further to the left might possibly have shown the protruding lip of the observer rather better and thus achieved even more successful interpretation.

Figure 4 *Simon Wood*

P. F. Wale exhibited advanced ability with his mounts: "High Beech"—*sunlight slanting through trees in a misty woodland scene; a delightfully unposed portrait of a small child,* and a curious high key effect in "Quai Vaubar".

Peter Baxter produced what was perhaps the best picture in the exhibition, a delicate study in black and white of snow-laden branches. His, too, was an interesting night sky record, although an explanatory caption would have been of value. While his negatives must clearly contain the results of good observation, the prints could be improved by more careful composition and exposure during enlarging.

Len Garrison was the only one to produce a self-portrait. This, as well as his many other exhibits, showed considerable promise if only because he is experimenting and trying to find a way to self-expression. Figure 3 is a good example of his work at its best.

Although both prints appear to have been "trade" processed, the two-colour prints by J. Wheeler should be mentioned. Many more colour prints ought now to find their way into exhibitions of this kind.

The large majority of colour transparencies were above average in colour balance, composition and exposure. Unfortunately, in many cases it was impossible to be quite certain of their ownership, as some were displayed without a label.

The colour of the final silver image, the tone range which can be reproduced on a print, what should be sharp and what diffuse or out-of-focus and what makes for good or effective composition are all of interest to the photographer and should make useful subjects for discussion at meetings of the Photographic Society.

Guy's Hospital—1940

Sir John Atkins, who received his medical training at Guy's, died recently at the age of 87. Following a distinguished career during the first World War, he played a very prominent part in the establishment of Queen Elizabeth College. The following letter which was written to him by his son, Professor Hedley Atkins, and discovered by him on going through his father's papers, describes one of the worst days of the last war for Guy's, during which the hospital was extensively damaged, yet miraculously without loss of life. We are grateful to Professor Atkins for sending us this vivid description, which might well be entitled "The Survival of Guy's".

Dec. 31st, 1940.

I had been left in charge of the hospital over the week-end, Peter Bishop having gone to see his family, and I was sitting in my room on the first floor of Nuffield House reading the *Sunday Times* and listening to the familiar drones, bangs and crashes without paying them much attention, when at 6.20 the hospital was hit within the space of a minute by three high explosive bombs and about thirty-five incendiaries. I went out to see what damage had been done and found that the whole of the neighbourhood was as light as day. Students and works department were already putting out incendiaries in the park and others were climbing on to the various roofs and dealing with incendiaries there. I made a quick tour of the inhabited part of the hospital and found that one high explosive had fallen through Evelyn and Naaman and had exploded in Cornelius on the first floor. Dorcas immediately underneath was full of patients and was wrecked, but it seemed that none had been seriously hurt. Another HE had entered obliquely underneath Martha ward—also on the ground floor and full of patients—had exploded and thrown up the mosaic floor and wrecked the ward completely, but there was only one relatively serious casualty. The third hit the dental school fair and square within twenty yards of my car and caused a lot of damage, breaking every window in the building—but not a scratch on ALY 567! I then installed myself in the Superintendent's office with two secretaries—six students to act as runners, two outside telephones and one internal phone which added to the general air of importance, but had been put out of action. The first task was to clear Martha and Dorcas and find fresh accommodation for these patients underground. This done, it was reported to me that the warehouses in Maze Pond were ablaze and out of control and that the College was in danger. I therefore had those students who lived in the College set to and remove all personal belongings and anything else of value. Needless to say, the first articles salvaged were the obscene panels in the extern's room, the milk churn and the fireman's helmet! It was next reported that the whole length of Newcomen Street running along the south side of the hospital, was ablaze, and that the fire was spreading towards the Medical School; I therefore had all valuable instruments removed to a place of comparative safety underground. Next I was told that Thomas Street was on fire and the most alarming explosions were emanating from Messrs. Downs Bros. Ltd., which looked rather like the inside of a ship's furnace when the stokers are really fresh from a night on shore. I thereupon rang up for six ambulances to stand by in case we should have to evacuate and ordered the house officers to make a census of all patients, to collect their notes and prepare them for immediate evacuation. Only one approach to the hospital was now clear—strangely enough through Crosby Row to Long Lane. The police informed me that they thought this could be kept open at least for a further two hours. I therefore had the X-ray apparatus dismantled and the tubes taken to Salomon's Centre, the outside door of which opens on to Crosby Row. Five hundred pounds worth of methylated spirit I had taken from the Dispensary and moved to the basement of the new ferro-concrete Pathology block and placed near a drain for jettisoning if need be. One thousand pounds worth of morphine cocaine, etc., I had placed in the fire-proof safe of Nuffield House. The College had by now caught fire and was blazing merrily much to everybody's satisfaction. Down's had fallen in with a resounding crash, but other buildings in Thomas Street were by now

competing to keep up the Christmas spirit. As for the warehouses, well—they are still burning now, what's left of them poor dears, forty-eight hours later. At about this time I had a visit from the Chief Constable, attended by a glittering array of Superintendents, who finished the whisky and went away again. The ambulances at last arrived with a terrific clanging of bells which, added to the hissing of the fire hoses, the roar of the flames and the crashing of timber together with anti-aircraft fire and a few straggling bombs, served to add a touch of *je ne sais quois* to the scene.

The evacuation of patients was carried out in perfect order, and seventy of them arrived safely at Sutton, together with their notes and nurses. The roof of the Medical block was by now on fire and I was fearful lest the tower should come crashing down. Two runners very bravely combed the whole building and reported it empty except for three terrified Boro' women crouching in a corner of a ground floor ward, who were extracted with much weeping, and added to an array of 130 ward maids, cooks, cleaners and what-nots who were being collected in the basement of Nuffield House. I had the police take them in tenders to a rest centre and set about rounding up sisters and nurses. They were similarly dealt with and keeping three of my runners, three house officers, the head engineer and the second engineer, matron and Miss Cherry (the Superintendent's Secretary), I sent all the students off to another rest centre. Our small party then packed suitcases—it is interesting, on thinking back, to remember the order in which one's most valuable possessions are packed under such circumstances—and we assembled on the ground floor of Nuffield House to await events. We had a good meal and a " nice cup of tea " and received reports intermittently from the police. It would be a fitting climax if I could tell you that we all perished in a terrific blaze standing gallantly to our posts, but I fear that what followed is pure anti-climax. We spent a very uncomfortable night with those damned suitcases, packed with all our blasted valuables, as pillows and woke up the next morning wreathed in smoke, but with all the fires under control. There was of course no water—there is none still—and it was starting to rain.

Well, the scenes round about the hospital are quite extraordinary. We stand almost intact amongst a mass of ruins. The College is only half burnt out, but the other half is fortunately wrecked beyond repair (!). The Medical block is not quite so tall and stately with the top floor burnt off, but is otherwise much the same. By the grace of heaven the Medical school was saved and the Surgical block sustained no more damage than from the original HE and Nobody Was Killed!

THE BRITISH MEDICAL STUDENTS' ASSOCIATION

by PATRICK ROWE

In the United Kingdom there are in the region of 12,000—13,000 Medical Students, 95 per cent of whom are members of the B.M.S.A. This is a body organised to cater for the specialised needs of these students, and when the Association was founded in 1942 it drew up the following aims:

(i) To provide a means whereby Medical Students can meet to discuss matters of common interest.
(ii) To represent the Medical Students of the British Isles and to represent their views.
(iii) To facilitate the exchange of views between Medical Students as a body and the Medical Profession.
(iv) To facilitate the co-operation of British Medical Students with those of other countries.

Guy's joined the Association in the summer of 1958, and from time to time have been actively interested in it. In 1958/59, George Preston and David

Landon held Executive posts in B.M.S.A. In those early years of our membership the enthusiasm was great, but since then interest has flagged.

When the amalgamation of the Students' Club Committee and the Student's Union took place last year, a B.M.S.A. sub-committee was set up. This has resulted in what we hope will be a renaissance for B.M.S.A. at Guy's; for we believe that B.M.S.A. has quite a lot to offer to the Guy's medical students if they would only avail themselves of the opportunities offered.

Amongst the Association's activities are the following:—

International Work

Clerkships are available in most European countries, from Finland to Malta, and from France to Czechoslovakia. These are arranged for one month and most offer free board and lodging. Clerkships abroad offer a unique opportunity to see different clinical techniques practised, to meet foreign students and doctors, and to appreciate their diverse approaches to Medicine. The number of clerkships available grows every year, and now includes internships in U.S.A. and Canada. The British Medical Student's Trust in conjunction with the Duke University, North Carolina, and the Montefiore Hospital, New York, offer Scholarships annually.

In Denmark in the summer there are summer schools for pre-clinical and clinical students every year as well as more specialised conferences. Medico-social visits are being made to Russia, Yugoslavia and Poland this year.

Grants and Welfare

In this field of activity, B.M.S.A. provides a service whereby a student may be brought far closer to the Association than perhaps in any other sphere. The Association's policy on Grants and Welfare is decided at the Annual General Meeting.

In all its work on Grants and Welfare, B.M.S.A. maintains good relations with the National Union of Students and the Scottish Union of Students, who have a lot of experience in this field. The Grants and Welfare Officer deals with individual student grant problems. These often need the weight of an association to persuade the authorities where the individual's application may become stagnant amongst a welter of officialdom in the offices of Local Authorities.

Education

By the very nature of the subject it has been designed to teach, the medical curriculum is in constant need of revision. As medicine advances, so the curriculum in the schools must be modified to keep pace with these changes. It is often the case that anomalies in the curriculum remain un-noticed by the authorities, but they seldom escape the eye of the student, who is forced to learn material which he knows to be out of date.

It is only when the many scattered complaints and recommendations are channelled together and presented as one document in the name of the National Association that the authorities begin to feel persuaded to act.

Recent studies conducted by the Association in this field include reports on the teaching of Psychological Medicine, Social Medicine, Pharmacology and Therapeutics, Obstetrics and Gynaecology, General Practice; and this year on the value of Special Appointments.

British Medical Students' Journal

Since 1946 the Association has published a Journal three times a year, and appoints a Director of Publications to edit it. It is not offered as an alternative to the hospital journal, but rather as a complement to it. The B.M.S.J. is on sale at Smith's Bookshop and in the Lower Spit in March, May, and October each year, and costs sixpence. At the A.G.M. last November, Steve Robins (2nd year) was appointed its Assistant Editor.

B.M.S.A. Wares

Scarves, ties and car badges can be obtained from the B.M.S.A. representative. The B.M.S.A. Film Catlogue now contains over 550 films, of which over

450 are on medical topics. The majority of them can be obtained free, save for postage via the B.M.S.A. representative.

Functions

The London Region organises visits to drug firms, medical centres, breweries, and confectionery factories, to mention a few. There is at least one a month and a visit never costs more than 6s. An example of this is the visit to a well-known factory at Wincanton, Somerset. The train leaves Waterloo at about 9.30 a.m. Then there is a 3-course meal with drinks, a tour round the factory, tea, and then a meal on the return journey.

The London Region also provides lectures in conjunction with the British Medical Association and with the Family Planning Association. There is hope that the very successful regional Dance may be held again in the Chislehurst Caves this year.

Guy's in B.M.S A.

Steve Robins (2nd year): Assistant Editor, British Medical Students' Journal.
Patrick Rowe (1st year Clinical): Grants and Welfare Officer. B.M.S.A. Liaison Officer for International Student Health. Chairman, London Region, B.M.S.A.
Garry Hambleton (1st year Clinical): Hon. Secretary/Treasurer, London Region, B.M.S.A.

Any of the above will be only too pleased to help any student who wishes to enquire about B.M.S.A.

The B.M.S.A. is here to provide Medical Students with a service and it is up to them to avail themselves of it.

CORRESPONDENCE

The Ela Waterman Memorial Fund

SIR, I have received a number of enquiries concerning the Ela Waterman Memorial Fund and means whereby contributions might be despatched.

This Fund has been inaugurated in order that a bed might be endowed at the Red Cross Children's Home in San Fernando as a permanent memorial to the late Ela Waterman, Matron of the San Fernando General Hospital. Ordinary Money Orders are acceptable, and should be made payable to the Ela Waterman Memorial Fund and despatched to Barclays Bank, High Street, San Fernando.

Yours, etc.,

A. M. JOHNSON.
Matron and Honorary Secretary, Guy's Hospital, Nurses' League.

Matron's Office,
Guy's Hospital.

The Junior Surgical Registrar Appointment

SIR, The Medical Committee has recently agreed to the establishment of a second Junior Surgical Registrar post. It may not be widely known that these posts are designed for men intending to take up a career in Surgery and who will for the most part have given evidence of this by having passed the Primary Examination for the F.R.C.S. Diploma.

The appointment gives the appointee excellent clinical experience in the surgical wards and introduces him to teaching the principles of clinical surgery. In addition he has an opportunity of participating in the theatre work and from time to time operating himself under supervision. It has always been the intention that the Junior Surgical Registrar should not be so fully occupied with routine duties that he has not adequate time at his disposal for study. In this way it is hoped that the appointment will be an ideal one for a man shortly to take the

Final Examination for the Diploma of F.R.C.S. and will, it is hoped, eventually provide a pool from which Registrars may be selected.

At present one of the Junior Surgical Registrar posts is vacant, and it is hoped that there will be a number of applicants for this.

Yours, etc.,

Professor H. J. B. ATKINS.

Department of Surgery,
Guy's Hospital.

Geriatric Medicine

SIR, I was most interested in your two recent articles by Dr. G. F. Stamp and Miss Elizabeth Tanner. Both of them give an excellent picture of geriatrics, a branch of medicine whose scope and importance increase every day.

I hope that any of your readers who can will take the opportunity to visit a geriatric unit and see what is being done there. Up and down the country the ideas expounded by Dr. Stamp are producing some of the greatest changes in the practice of medicine to-day. It is, for example, no accident that the only scientific research into nursing procedures so far undertaken in this country was conducted in a geriatric unit. This work by Norton, McLaren and Exton-Smith[1] is applicable far beyond the specialised field of geriatrics and will undoubtedly influence the whole practice of nursing in the future.

May I add one comment? Geriatrics is still identified in the minds of those who know little about it with " chronic sickness", a depressing and wholly outmoded concept.

It cannot be sufficiently stressed that geriatrics is a branch of acute medicine requiring additional techniques and facillties for those patents who may need prolonged nursing care.

An analysis of the fourteen hundred patients admitted each year to the Hastings Geriatric Unit shows that over two-thirds are medical emergencies admitted on the day of request, cerebrovascular and cardio-respiratory emergencies predominating. One-third of all the medical emergencies referred by the Hastings Bed Bureau come direct to the Geriatric Unit. Less than one-fifth are patients who are not acutely ill, but have medical or social problems that can only be dealt with in hospital after preliminary domiciliary assessment after the manner described by Dr. Stamp. Some of these require medical investigation, others require care and treatment on social grounds, often in order to allow their relatives a well deserved holiday.

The balance is made up by those transferred from other hospital departments, mainly orthopaedic, urological and radiotherapy, and a few deliberately admitted for terminal care.

Of all these patients only eight per cent require hospital care for more than three months and three per cent. for over a year. Thirty-five per cent. die in hospital, but the remainder, nearly two-thirds, are discharged again after treatment and rehabilitation. These figures strongly support Dr. Stamp's statement that the number of patients requiring long-stay care in a district where there is an active geriatric unit can be kept quite low.

I hope that the Gazette will publish more on this important subject. Meanwhile, congratulations to Dr. Stamp and Miss Tanner for their excellent articles, and to you, sir, for your valuable initiative.

Yours, etc.,

R. E. IRVINE,
Consultant Physician,
Hastings Geriatric Unit.

St. Helen's Hospital,
Hastings.

[1]Norton D., McLaren R., Exton Smith, A. N. (1962), *An Investigation of Geriatric Nursing Problems in Hospital.* London. The National Corporation for the Care of Old People

SIR, I would like very much to say farewell to Guy's through your correspondence column. I have appreciated student and staff hospitality and hope that should any "Guy's" people come to Australia, they call into Sydney. Surf boards will be provided.

Yours, etc.,

BRUCE STOREY.

Evelina Children's Hospital, S.E.1.

REVIEWS

MODERN TRENDS IN ANAESTHESIA. Volume 2.
Edited by EVANS and CECIL-GRAY. Butterworths. *Price* 60*s*.

This small and expensive book deals with electrolyte and enzyme disturbances which could possibly be the attendant results of anaesthesia, whether by mistake or design. It is the composite work of eight authors, all of whom are "specialists" in their own right. The first two chapters deal with acid-base balance and that elusive quantity 'pH'. The attempt to clarify the terminology of such studies is more than helpful. The late Professor Woolmer's chapter is followed by a well presented thesis on the effect of CO_2 moiety in the body; and this in natural sequence is succeeded by a chapter on effects of hypothermia on blood chemistry, and then a chapter on bypass techniques in relation to acid base-control. This latter chapter is well presented, readable, and may help other clinicians concerned with care of post-operative cardiac cases.

Ian Geddes' chapter on biochemistry deals essentially with the ever advancing horizons of anaesthesia, and the use of various hypnotic and anaesthetic agents is discussed with reference to use for patients who are receiving hormone treatment. There are short sections on intravenous nutrition and massive blood loss and its concomitant biochemical derangements—this latter is still of paramount importance—however trustworthy the surgeon. The last section deals with the hardy perennial topic of muscle relaxants and the cholinesterase systems, and begins: 'As readers become more numerous, it is natural for writers to become more indolent!" There are some new ideas in this chapter, as indeed there are throughout the book, which give food for thought.

The book is of very special importance to a comparatively narrow section of clinicians, this is probably why it is expensive. The bibliography is adequate, though not exhaustive. It is well printed and bound, and a "must" for the F.F.A. candidate. J. C. SIMPSON.

VISUAL DISORDERS AND CEREBRAL PALSY.
Little Club Clinics in Developmental Medicine No. 9, Edited by VERNON H. SMITH. National Spastics Society, in association with Heinemann Medical Books. 1963. Pp. 59. *Price* 15*s*. 6*d*.

This slim, well-produced volume, comprising the proceedings of the International Study Group of the National Spastics Society, held in Oxford in 1962, makes an acceptable addition to its predecessors in the series of Little Club Clinics in Developmental Medicine. Interest in the visual aspects of cerebral palsy is fairly recent, perhaps because, as Dr. Gardiner suggests, "Too often, people fail to look for other defects because the physical defect already diagnosed is bad enough". Nowadays the importance of accurate visuo-spatial information to the developing child is realised, especially when those children have impaired co-ordination and control of their movements. Mrs. Abercrombie points out the added burden to the cerebal-palsied child of a squint, with the defective binocular stereoscopic vision which it produces. She shows too that cerebral palsy may be associated with faulty fixation and following movements by the eyes which presumably may disturb perception and ultimately the learning process. Squint, its aetiology and its relationship to cerebral palsy, are discussed in a number of papers which prove most interesting reading. The incidence of squint in normal school children is stated to be about two per cent; figures ranging from seventeen to sixty per cent. are given for cerebral palsy, which indicates both the size and uncertainty of the problem. Adding to the difficulties in analysing material is the fact that paretic squints in children may later become concomitant. A raised incidence of hypermetropic refractive errors in cerebral palsy is disussed by Dr. Gardiner, and the psychiatric background of squints in general is investigated by Dr. Vaughan, and there is a useful paper on eye movements in the newborn by Dr. Paine.

It would be a pity if this volume were only read by opthalmologists, neurologists and paediatricians, but certainly it would reach a wider public if the papers had been knitted together in some way, even if it were only to avoid overlap between the articles. Thus, Vernon Smith's list of definitions would have been more useful at the beginning of the book rather than in the middle. However, this is carping about a book which is well worth having. A. J. BRON.

CEREBELLUM, POSTURE AND CEREBRAL PALSY:

Little Club Clinics in Developmental Medicine No. 8. Edited by GEOFFREY WALSH. The National Spastics Society in association with Heinemann Medical Books. 1963. Pp. 119. *Price* 15*s*.

This contains the papers presented at a meeting in Oxford last year. Some are valuable summaries of our present knowledge and are of interest to the general reader. Alf Brodal writes the section on anatomy; Geoffrey Rushworth on physiology; and Ronald Norman on the neuropathology of cerebellar disease in early life; whilst Dr. Mackenzie of this Hospital gives an account of cerebellar function from the viewpoint of the neurologist. Other papers will appeal more to the specialist such as those on Ataxia-Telangiectasia, Congenital Ataxic Syndromes and Cerebral Palsy, Clinical and Genetic Aspects of Congenital Cerebellar Ataxia, and two on E.E.G. changes. A further group—unfortunately scattered—deals with applied physiology and some ingenious experiments and techniques are described. The titles include Postural Sway, Measurement of Muscle Tone and Posture, the Rôle of Stretch Responses in the Regulation of Movement and Postural Stabilisation and Measurements of Cerebellar Movement Disorders.

Unfortunately there are several textual errors. For example, on page 69, basilar artery insufficiency has replaced basilar impression, and on page 67, figure 4, shows a secondary deposit and not the angioma referred to in the text. Luckily these mistakes are usually recognisable as such, for this little book is certainly worth borrowing and for some even buying.

W. R. MORRIS.

CLEFT LIP AND PALATE.

by W. G. HOLSWORTH. Heinemann Medical Books. Third Edition, 1963. Pp. 204. *Price* 50*s*.

The 3rd Edition of Mr. Holsworth's survey of this complex subject should prove as popular as former editions. The work is well produced embracing a fairly extensive survey of all facets of this subject. There are contributors for the chapters on normal development, cleft formation, also orthodontia, prosthodontia, nursing care and anaesthesia. This gives some idea of the different aspects under consideration and emphasises the necessity for team-work in the treatment of "cleft lips and cleft palates" and the need for the integration of individual effort into a "cleft" unit or programme.

The chapters on "normal development" and "cleft formation", are well presented, and the latter provides an interesting account of experimental work in the production of "clefts". The chapter on orthodontic care is excellent, the outstanding feature being its clarity and simplicity of presentation. The common surgical techniques that one hears about in connection with the treatment of "cleft lips and palates" are described in varying detail, and a useful chapter on "secondary operations" for the correction of subsequent deficits and deformities is included. The book also includes a number of references for those who wish to pursue the subject in greater detail.

This is an attractive and comprehensive book on what is certainly a challenging branch of surgery. On the debit side one is aware of a lack of emphasis of the otological complications of cleft palate. Otherwise I can only cite a few typographical errors which scarcely merit mention.

O. SHAHEEN.

NURSES' MANUAL OF LABORATORY TESTS.

SOLOMAN GARB and P. STONE. Heinemann. *Price* 10*s*. 6*d*.

This is a second edition which has been revised and to which additional material added. This would be a most useful book for ward and departmental sisters to hold for reference by their nursing staff. At the end of the book there is an excellent summary of listed tests for organs and systems. In the chapter dealing with laboratory tests it describes briefly the reason for the test, the method of collecting the specimen, what happens to it in the laboratory and the normal result to expect.

R. BUTLER.

SPORT

CRICKET

In keeping with cricket at Test level, there has been no lack of incident in Guy's matches recently, and decisions have been reached despite the weather. The match against R.N.V.R. was particularly exciting. The visitors' innings stuttered peculiarly: 14 for 3, 116 for 4, 152 for 5, 171 all out—with good bowling from N. Knott and G. Hambleton, and splendid all-round fielding being responsible. Guy's were left 140 minutes to win and were given a fine start by H. MacGregor and T. Huins. Then G. Hambleton appeared on the scene. Starting cautiously, he slowly opened his shoulders and, scoring 22 off the penultimate over, carried Guy's to victory by 4 wickets with a score of 85 not out.

Against Queen's University, Belfast, P. Banks bowled beautifully to record six wickets for 45. However, our visitors' total of 186 proved too great and, despite a valiant last wicket flourish by J. C. Thomas (16) and R. Brown, the side was out for 139 off the last ball of the game. D. Silk had previously played a fine innings of 49 in opening the innings.

Fleet Street Strollers seemed to be generally lethargic and managed to reach 153 for 6 off 53 overs, against very steady bowling. Perhaps our visitors have been finding the pressure of recent events too great. Guy's reply was sparked off by Appleby, and ably supported by Price and Biggs; one mammoth six from Biggs nearly decapitating the ex-captain of Rugby, engaged in his own game at the boundary.

Southwark Clergy, as if glad to be out of their cassocks, were altogether too fleet-of-foot for a Guy's eleven. The visitors amassed 129, despite skilful bowling by Lloyd-Edwards. The Hospital reply was suitably respectful and, although N. Healey showed aggressive intent, the Clergy were soon victors by 38 runs.

SWIMMING

In a recent and enjoyable excursion into Kent, the Swimming Club visited Tonbridge School. The School pool—open-air, 63 deg. F. and 66⅔ yards long, provided a welcome change to the usual run of London pools, where matches are usually held. Young and fit, the match was very closely contested in the swimming, in which notable performances were given by A. Forbes (winner of 100 yards Free Style), and K. McGlynn (winner of 33⅓ yards Butterfly, and an excellent first leg in the Medley Relay, also won). Eventually, the Hospital ran out winners by 35½ to 34½. In Water Polo, the schools' inexperience let them down and they fell to pieces in the second half, having been only one goal down in the first.

In Polo, recently, Guy's met King's College Hospital twice. In a friendly match, Guy's wasted many chances, but still won by 6—3. In the United Hospitals' K.O. Cup, King's College Hospital started 2—1 up on a handicap basis, based on previous results. Nor was this the only difficulty, as one member of the side failed to turn up for the match. This seems to be an inescapable part of the Guy's tradition, and must be eradicated if winning teams are to be produced. The Handicap system in itself presents enough problems—based as it is on the results of a differently composed team—but even that eccentricity of running a cup competition could, and should, have been overcome.

SHOOTING

In a recent match against a Staff side, the Rifle Club went down to an augmented team. As the Staff side was only four in number, the full team score was made up by Dr. Mant, who selected a few scores from people he knew at Bisley. This fact, coupled with weather conditions (the wind being strong but steady), contributed to defeat by 42 points. Dr. Mant made an excellent score, and was responsible for suitable and memorable celebrations after the event.

ATHLETICS

At a recent meeting of the London University Athletic Club, R. Morris was elected Captain for the year 1963-64, and A. Winskill Hon. Secretary. This is a rare distinction for the Hospital to boast both Captain and Secretary of a prominent University Club, and they are to be congratulated on their election.

Reports and Results

CRICKET

1st XI v. R.N.V.R.

At H.O.P. 23rd June, 1963

R.N.V.R., 171 (N. Knott, 4—48; G. Hambleton, 4—30).
Guy's, 172—6 (G. Hambleton, 85 not out; H. MacGregor, 31; T. J. Huins, 25).
Result: Guy's won by 4 wickets.

1st XI v. Queen's University, Belfast.

At H.O.P. 26th June, 1963

Queen's University, Belfast, 186 all out. (P. Banks, 6—45).

Guy's	
D. Silk, ct.. Thompson, b. Rainey	49
A. Proctor, l.b.w. b. McGihsey	6
R. Carruthers, b. Thompson	3
M. S. Jones, b. Elliott	11
M. Joyce, l.b.w. b. Cooke	12
A. Morris, c. Ridge, b. Cooke	23
I. Reekie, c. Elliott, b. Rainey	12
N. Turfitt, l.b.w. b. Cooke	0
P. Banks, c. Elliott, b. Rainey	0
R. Brown, not out	3
J. C. Thomas, l.b.w. b. Thompson	16
Extras	4
Total	139

Result: Lost by 47 runs..

Guy's won the toss and elected to field on a pitch still rather wet from recent rain. Despite one early success for Guy's, Belfast punished our attack, somewhat depleted by exams. Banks got the second wicket with his second ball, with the score then at 49, but the opposition hit anything short very hard indeed, and the scoring was boosted by an unusally high number of sixes. Eventually Belfast were all out for 186, Banks having bowled sixteen consecutive overs and taken 6—45.

When Guy's batted they lost two fairly quick wickets to the Belfast opening attack. Silk was playing exceptionally well and he found two partners in Jones and Joyce, both of whom, however, stayed all too short a time. Silk was finally fifth out for a fine 49, with the score then 89. The middle order batsman saw the score over the hundred, but the last pair came together at 7.15. Thomas promptly hit an excellent straight six off the back foot, and then settled down to play out the remaining time However he was unfortunately out off the very last ball of the match.

MIKE JONES

An XI v. Southwark Clergy.

At H.O.P. 3rd July, 1963

Clergy, 129 (Lloyd-Edwards, 2—16).
Guy's, 91 (N. Healey, 24).
Result: Clergy won by 38 runs.

1st XI v. The Mote

At H.O.P. 22nd June, 1963.

The visitors found runs hard to get against some good opening bowling by both Knott and Miller, but wickets fell slowly and it was not until the score was 100 for 3 that a breakthrough was made. Hambleton and Davoodbuoy took five wickets between them while 14 runs were scored, and eventually the Mote struggled to 145 all out. Knott took 4—45 in a fine spell.

Silk and Appleby opened with some flowing shots and the target of 145 in two hours seemed easily reachable. However, four quick wickets fell and the main flow was stemmed. Intelligent batting by Crafts and Jones paved the way for some brisk hitting by Edgar and Davoodbuoy, who saw Guy's home with two minutes to spare.

D. MILLER.

The Mote, 145 (N. Knott, 4—45; C. Davoodbuoy, 3—29).

Guy's, 148—8 (J. Crafts, 30; M. Jones, 21; M. Appleby, 23; D. Silk, 19; C. Davoodbuoy, 19 n.o.)
Result: Guy's won by 2 wickets.

MOTOR CLUB

The Motor Club had a very pleasant evening for their Midsummer's rally. Sixteen crews started, one of which decided in the first section that a trip to Hastings would be preferable to motoring around the Kentish countryside.

The first section was a straightforward map-reading section which took competitors from the suburbs into the country. The first marshalling point was arrived at from the correct direction only by the more intrepid drivers who were willing to risk ignoring a sign indicating that the road was unsuitable for motor vehicles. One car approaching from the wrong direction attempted to turn round at the marshalling point, and succeeded in ramming its exhaust pipe into the bank. No damage was incurred, apart from the three breathless marshals who pushed it out.

The second section consisted of navigating by coded information on signposts. This proved to be frustratingly slow for some of the faster crews, who drove straight to the end of the section Those competitors who slowly persevered arrived with only light penalties. The end of this section was ideal for a break, thermos-flasks and sandwiches being produced all round.

The beginning of the third section was marred by the sparse information given, and many competitors were some time getting under way. Once a start had been made,

however, no real difficulties were encountered. The last section was slowed considerably by the narrow roads, which necessitated backing up on several occasions for week-end drivers travelling in the opposite direction. It was on this section that one member had a near miss with a Humber Super Snipe with a blue lamp on top.

The winner was P. Dodd in a Triumph Herald, who was ably navigated by Miss J. Summersfield. This result was all the more commendable as this was only their second rally. Second were M. Titley and J. Hunt on an Austin Devon which has come to be a familiar sight on Guy's rallies. The novices prizes were won by M. Tyne and C. Quick in a Mini.

The Motor Club remains indebted to Dr. and Mrs. Tulley who donated the prizes which were presented by Mrs. Tulley.

FRED MERRIFIELD.

SWIMMING

v. Tonbridge School.
At Tonbridge 30th June, 1963
Result: Swimming, won 35½—34½.
Water Polo, won 7—0.

Team: D. Barnes (Capt.), A. Forbes, K. McGlynn, J. Peter, J. Holland, J. Siegle, M. Padgham (guest from London Hospital).
Scorers: J. Holland (3), M. Padgham (3), D. Barnes.

v. King's College Hospital.
At Grange Road Baths. (Friendly match)

Team: B. Valentine, D. Barnes, J. Holland, J. Siegle, D. Bartlett, J. Tripp.
Result: Won, 6—3
Scorers: Barnes (2), Holland (2), Bartlett (2).

U.H. Cup, 1st Round
Team: as above.
Result: Drawn 0—0
K.C.H. win on 2—1 Handicap aggregate.

SHOOTING

G.H.R.C.
Match at Bisley versus the Staff.

Staff

	200*	500*	Total
‡Dr. Mant ..	47	46	93
‡Mr. Law ..	38	45	83
‡Mr. Smith (M.V.)	35	44	79
‡K. M. Pilcher ..	44	46	90
K. W. Bartlett ..	49	46	95
W. Magrey ..	49	46	95
			535 ex. 600

‡ Guy's Men.

Students

	200*	500*	Total
P. Jordan ..	44	47	91
Dr. N. E. A. Renner	41	43	84
P. Worledge ..	39	42	81
A. Kumar ..	36	39	75
J. W. Franklin ..	37	36	73
M. Thomson ..	44	45	89
			493 ex. 600

LADIES TENNIS

NURSING TIMES TENNIS CUP
QUARTER-FINAL

v. Long Grove Hospital, Epsom.

A team A. Howorth and M. Ryan
Won 8—10, 6—3, 6—3.
B team D. Latta and J. Morrison
Won 6—2, 6—1.
Reserve: J. Wilson.

HOSPITAL INFORMATION

APPOINTMENTS VACANT

GUY'S HOSPITAL, S.E.1.

Applications are invited for the post of **Junior Surgical Registrar,** with appointment from 1st October, 1963. Forms of application are obtainable from, and should be lodged with, the Superintendent, Guy's Hospital, S.E.1., *not later than* **26th July, 1963.**

GUY'S HOSPITAL MEDICAL SCHOOL, S.E.1.

Applications are invited for the post of **Junior Lecturer in Anatomy** (part-time) with duties to commence on 1st October, 1963. Application forms are obtainable from, and should be lodged with, The Dean, Guy's Hospital Medical School, not later than **Friday, 26th July.**

GUY'S-MAUDSLEY NEUROSURGICAL UNIT

Locum Senior Registrar or **Registrar** required from 1st August, 1963, on a month to month basis. Apply immediately to L. H. W. Paine, House Governor & Secretary, Maudsley Hospital, Denmark Hill, S.E.5.

APPOINTMENTS

GUY'S HOSPITAL

The following Dental House Surgeon appointments have been made by the House Committee for the period July 1st to December 31st, 1963:

Resident:	Mr. J. Page Mr. H. G. Lewis
General Duties:	Mr. C. D. Boxall Mr. K. A. Crawford Mr. A. J. Pickles Miss J. P. Whittam Mr. J. W. Norman Mr. R. H. Sainsbury
Prosthetics Dept.:	Mr. L. W. M. Loader
Children's Dept.:	Miss J. M. Pritchard Miss F. A. MacGregor

Assistant Dental House Surgeons for the period July 1st to September 30th, 1963:

General Duties:	Mr R. P. Juniper Mr. B. D. Glynn Mr. J. H. Topham Mr. J. C. L. Margerison
Children's Dept.:	Mr. D. H. Griffiths Mr. P. G. Sullivan
Preventive Dentistry Dept.:	Mr. B. Penhall

PASS LIST

ROYAL COLLEGE OF SURGEONS OF EDINBURGH

F.R.C.S.

A. W. Banks
J. G. Sekaburiga
P. C. Shaw

SOCIETY OF APOTHECARIES OF LONDON

D.I.H.

P. L. Pelmear

ROYAL COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS

F.R.C.O.G.

G. M. Evans
G. T. Hammond

M.R.C.O.G.

J. F. S. Batson

D.Obst.

G. E. Conn
T. R. Cullinan
C. V. Everard
Susan R. Greenwood
J. B. Gritton
W. F. Jaworski
Anne B. Kenshole
D. A. H. Langman
S. R. Meadow
C. S. Ogg
W. B. Pearce
Margaret N. R. Pitt
M. C. Rallings
R. Stilwell
Barbara Walsh
G. P. Williams
R. J. Worden

ROYAL COLLEGE OF SURGEONS OF ENGLAND

L.D.S.

Dental prosthetics and properties of Dental materials.
May, 1963

D. M. Balean
R. Becker
M. J. Breeze
A. M. Holmes
R. E. King
E. D. Lettington
R. J. Muya
S. L. R. Oakenfull
M. J. C. Purnell
F. J. Rhodes
P. J. Wren

PAPERS BY GUY'S MEN

In order to make this list as complete as possible, Guy's men whose papers have not been noted in this column are asked to send the Editor details of their publications.

Acheson, R. M. Blaney, R., Butterfield, W. J. H., Chamberlain, Jocelyn and Scott-Brown, Mary. Factors influencing referrals to the out-patients department of a London teaching hospital. *Brit. J. soc. prev. Med.* 1963, **17**; 81.

Bishop, I. R. and another. The ecologic distribution of small mammals in the Channel Islands. *Mammalia*, 1963, **27**; 99.

Brooksbank, B. W. L. and others. The relationship between urinary androst-16-en-3α-ol and urinary 11-deoxy-17-oxosteroid excretion. *J. Endocrin.* 1963. **26**; 149.

Butterfield, W. J. H., Garratt, C. J. and Whichelow, Margaret J. Peripheral hormone action: studies of the clearance and effect of ^{131}I-iodoinsulin in the peripheral tissues of normal, acromegalic and diabetic subjects. *Clin. Sci.* 1963, **24**; 331.

Emslie, R. D. and another. Reshaping the interdental gingiva by odontoplasty. *Brit. dent. J.* 1963, **114**; 460.

Fry, J. Natural history of hay fever. *J. Coll. Gen. Practit.* 1963, **6**, 260.

Hamilton-Miller, J. M. T. Penicillinase from *Klebsiella aerogenes*. *Biochem. J.* 1963, **87**; 209.

Jackson, B. G. and others. Management of tetanus neonatorum with intermittent positive-pressure respiration. *Arch. Dis. Childh.* 1963, **38**; 251.

Levin, B. and others. Fructosaemia. An inborn error of fructose metabolism. *Arch. Dis. Childh.* 1963, **38**; 220.

Smith, J. T. Penicillinase and ampicillin resistance in a strain of *Escherichia coli*. *J. gen. Microbiol.* 1963, **30**; 299.

Smith, J. T. and Hamilton-Miller, J. M. T. Differences between penicillinases from gram-positive and gram-negative bacteria. *Nature*, 1963, **197**; 976.

Taubman, J. and MacKeith, Mary Gaucher's disease with acro-osteolysis. *Proc. R. Soc. Med.* 1963. **56**, 294.

Thurston, J. G. B. Bilateral hemimelia with facial and genital abnormalities. *Proc. R. Soc. Med.* 1963, **56**, 293.

Wells, R. S. and another. Natural history of granuloma annulare. *Brit. J. Derm.* 1963, **75**; 199.

Wright, P. H. and others. Diabetic acidosis in rats treated with anti-insulin serum. *Clin. Sci.* 1963, **24**; 417.

Zilkha, K. J. and McArdle, B. Phospholipid composition of cerebro-spinal fluid in diseases associated with demyelination. *Quart. J. Med.* 1963, n.s. **32**; 79.

CHANGES OF ADDRESS

Dr. S. Carden, 15, Portman Square, W.1.

Mr. B. P. Cousins, Hill View, Swimbridge, N. Devon..

Mr. R. G. Cumming, L.D.S., R.C.S., Gloucester House, 8, Gloucester Street, Faringdon, Berks.

Mr. and Mrs. Nils Eckhoff, 30, Bark Place, W.2.

Dr. A. M. Edwards, Napsbury Hospital, Nr. St. Albans, Herts.

Mr. D. Fuller, F.R.C.S., Eng., 6th Floor, Florence Nightingale Bldgs., 22, Kotze Street, Hillbrow, Johannesburg.

Surgeon Capt. D. L. Goodridge, R.N., Royal Naval Hospital, Bighi, Malta, G.C.

Mr. K. F. R. Hutchison, L.D.S., 55, Lowlands Road, Eastcote, Pinner, Middlesex.

Dr. and Mrs. I. Kelsey Fry, The Pines, Woodlands Road, Bickley, Kent.

Squadron Leader D. Matthews, L.D.S., Officers' Mess, Royal Air Force, Digby, Lincoln.

J. D. R. Nicholas, L.D.S., 78a, Waterloo Road, Cardiff, Glam.

Dr. R. Notley Moorfield House, Edgar Street, Hereford.

Dr. A. Redmond, Apt. 9, 1, Peterborough Street, Boston, Massachusetts.

Dr. H. Richards, Consultant Anaesthetist, Addenbrookes Hospital, Cambridge.

Dr. R. A. Smith, 2, Sandhurst Road, Banson Park, Bexley, Kent.

Dr. A. P. Staz, c/o Dept of Dentistry, University of Witwatersrand, Johannesburg, South Africa.

Sir Charles Symonds, Field House, Ham, Nr. Marlborough, Wilts.

Dr. N. L. J. Williams, The Buffalo General Hospital, 100, High Street, Buffalo 3, N.Y., U.S.A.

BIRTHS

WHITFIELD.—To Sheila (née Copeland, S.R.N.) and Ian Whitfield, a son, at the Royal Canadian Hospital on 31st May, 1963, a brother for Michael and Nicola.

DEATHS

RICHARDSON—On June 26th, 1963, Philip Lawrence Richardson, M.B., B.S.

GUY'S HOSPITAL GAZETTE

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Editors *W. G. Reeves*
I. A. Baker

Sports Correspondent *E. Tiller*

Guy's Hospital, London

PASSIM

It is with great pleasure that we learn of the recent election of Sir Russell Brock as President of the Royal College of Surgeons. For many years he has featured prominently in the affairs and administration of the College, and has been a member of its Council since 1948. The last Guy's man to receive this honour was Sir Henry Greenway Howse in 1902, and with the return of this distinction to a member of the Guy's community we wish Sir Russell every success during his term of office.

At Leisure

Leisure time at the hospital is spent in various ways. The late Dean of the Medical School, T. B. Johnston, once said that every student should play at least one winter and one summer game. To be fit for games is to be fit for work was his theme. Certainly at Guy's sporting pastimes are still encouraged to a large extent and those wishing to take advantage of the adequate opportunities for such recreation can usually find sufficient time. As well as providing exercise and challenging varied talents, playing in hospital sports teams provides the opportunity to make innumerable friends within and outside the Hospital. To the privileged few, welcome excursions are made outside the Metropolis. Others are not attracted by the flight of a ball or the swift co-ordination of muscles and prefer gentler cultural activities. Thus are organised theatrical productions and musical concerts. Further amusements exist on a smaller scale. A game of bridge following lunch, an afternoon in the billiards room or a casual darts match in a local hostelry take up many student hours. Perhaps the biggest impression on leisure time at Guy's has been made by the cathode ray tube installed in the College lounge. Such is its pull that a Test match usually permits standing room only, while *Z-Cars* fills up most positions. No doubt present-day members are content with their leisure, but on reading in a past *Gazette*, it would seem that some forms of recreation have lost their grandeur. Where now exists the style and finesse of the *White Hat Clique*—a group composed of staff and senior students, who in the 1870's, wearing white hats and being immaculately dressed would parade up and down Burlington Arcade from five to six, two to three evenings a week? This to be followed on Sunday afternoons by a meeting in a large room in Regents Street, where the art of boxing was practised with several professionals. Perhaps many to-day do not make the effort—or is that the modern concept of leisure.

GUY'S DIARY

We offer our congratulations to the following on their appointments :

Professor Hedley Atkins as a member of the Medical Research Council, as from October 1st.

Dr. Philip Evans, as honorary consultant in paediatrics to the Army.

Dr. B. Mallett, consultant psychiatrist to the Hitchin and Stevenage group of hospitals and honorary research fellow to the department of experimental medicine at Guy's.

Dr. J. A. K. Meikle, consultant radiologist at Aberdeen, as from November 1st.

Dr. K. H. Nixon, consultant in physical medicine to the Portsmouth group of hospitals as from October 1st.

Mr. N. H. Porter, consultant surgeon to the Brighton and Lewes group of hospitals.

We record with regret the retirement on June 30th of Miss E. R. Tanner, who has been Principal of the School of Physiotherapy since 1959, having been at Guy's since 1949. She is succeeded by Miss Jean Watkins, previously the Assistant Principal.

We congratulate Mr. John Hanby, consultant chiropodist to Guy's since 1935, who was awarded the O.B.E. in the recent Honours' List, for services to chiropody.

A 16 mm. colour film, *"Preoperative Preparation for Surgical Assistants"*, made in 1962 by Mr. F. G. Ellis and Mr. C. E. Engel, was recently awarded a gold award in the annual B.M.A. film competition.

We also congratulate K. M. Pilcher, L.D.S., who on Saturday, July 26th, became one of the youngest shots to win the Queen's Prize at Bisley, scoring 283 points out of a possible 300. In addition he won the Silver Medal for the top score in the prize semi-final and finished third in the grand aggregate.

The Physiological Problems Associated With Manned Space Flight

by

Squadron Leader J. ERNSTING, O.B.E.,

R.A.F. Institute of Aviation Medicine, Farnborough, Hants.

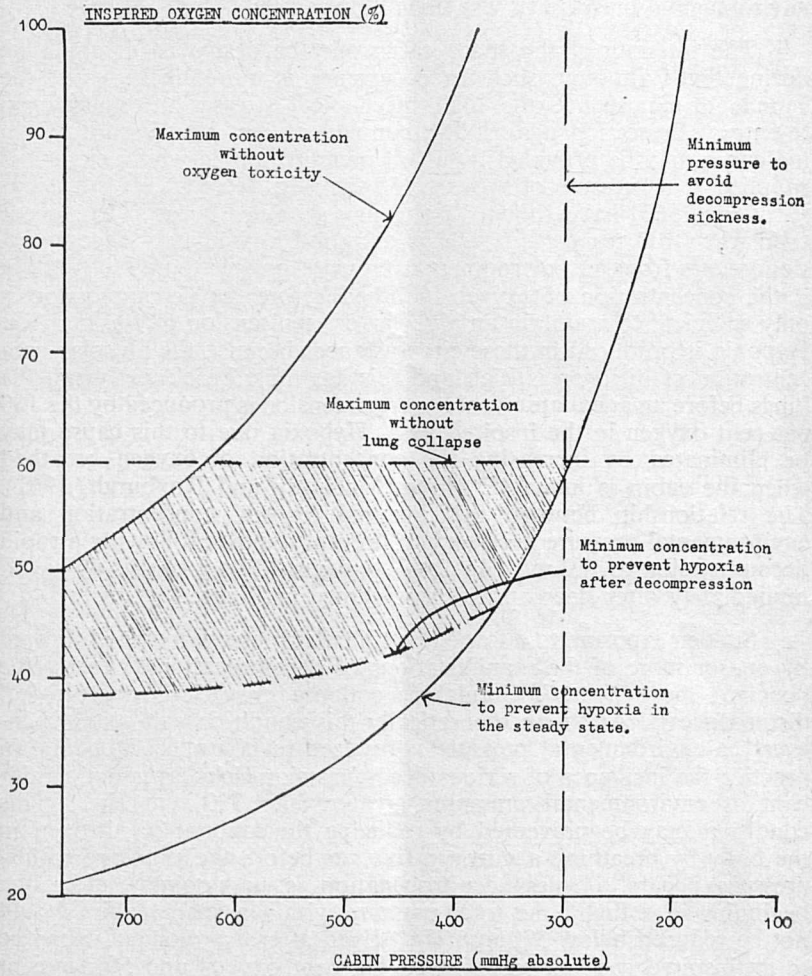
Virtually none of the biologically important physical attributes of man's normal environment are present in space. Many of the important characteristics of man's normal environment are due to the properties of the atmosphere which surrounds the earth. Thus the atmosphere contains oxygen, exerts pressure and provides protection against the harmful radiations and particles which pervade space. To leave the earth's surface and travel through space a vehicle must be accelerated to a high velocity in order to overcome the earth's gravitational attraction and the resistance of the atmosphere. Thus in order to attain a circular orbit around the earth a vehicle must have a velocity of about 16,000 m.p.h. whilst a speed of 25,000 m.p.h. is necessary before a vehicle can escape the earth's gravitational field. Thus in attaining an orbit a vehicle and its occupants will be exposed to increased accelerative forces for some 5-8 minutes. Once in orbit, however, the vehicle and its contents become weightless, since the gravitational force exerted by the earth is opposed by an exactly equal force due to the circular motion of the vehicle around the earth. In order to return to ground level a vehicle in orbit must be decelerated. The rate at which it descends through the earth's atmosphere must be carefully controlled as friction between the skin of the vehicle and the atmosphere induces a rise of temperature which could be catastrophic. Whilst the biological effects of the accelerative and decelerative forces to which a space vehicle would be subjected during escape from and re-entry into the earth's atmosphere can be studied on earth, prolonged weightlessness can only be produced in space flight.

THE GAS ENVIRONMENT

Without doubt the physiologically ideal gaseous environment for normal man is air at a pressure of 760 mm Hg and such an atmosphere is employed in the Russian manned spacecraft. There is, however, a need to keep the weight of each component of the vehicle to a minimum so as to reduce the energy required to launch it into space. The higher the pressure of the atmosphere within a vehicle the thicker and hence the heavier will be its walls. Thus the total pressure of the gas within the American Mercury spacecraft is only 260 mm Hg. Further, in the event of a structural failure of the space cabin or the need to leave the vehicle in space, as is intended on the moon, the astronaut must be provided with a suitable pressure environment by means of a full pressure suit. An acceptable degree of mobility whilst wearing a current pressure suit is only possible when the pressure within it is less than 260 mm Hg. There are, therefore, circumstances in which

the total pressure of the gaseous environment of an astronaut will be considerably less than 760 mm Hg.

Figure 1: The relationships between inspired oxygen concentration and cabin pressure dictated by specific physiological requirements. The shaded area represents the relationship between oxygen concentration and pressure which meets all the physiological requirements.



The physiologically acceptable relationship between the pressure within the space cabin or pressure suit and the composition of the inspired gas is determined by a number of factors. Of primary importance is the need to prevent significant hypoxia. Some impairment of higher intellectual functions, such as complex decision making, occurs when the alveolar oxygen tension falls below 75 mm Hg. In practice it is desirable that the alveolar oxygen tension should be

maintained at the value which exists when air is breathed at ground level (103 mm Hg) and under no circumstances should it fall below 60 mm Hg. The relationship between the concentration of oxygen in the inspired gas and the total environmental pressure required to maintain an alveolar oxygen tension of 103 mm Hg is presented in Figure 1. It is apparent from Figure 1 that the alveolar oxygen tension produced by breathing air at ground level cannot be maintained at an environmental pressure of less than 190 mm. Hg.

The integrity of the space cabin may be destroyed at any time during flight although such an occurrence is more likely whilst the vehicle is exposed to the high mechanical stresses of launch and re-entry. Protection against the consequent loss of pressure within the cabin may be provided by a full pressure suit in which oxygen is supplied at a pressure of at least 150 mm Hg. Recent investigations (Ernsting 1963) have shown that transient severe hypoxia can occur even when 100 per cent oxygen is delivered immediately decompression occurs from an environmental pressure greater than 380 mm Hg if the concentration of oxygen breathed before the decompression is only sufficient to maintain an alveolar oxygen tension of 103 mm Hg. Hypoxia is produced in these circumstances because the alveolar concentration of nitrogen is high and this gas must be cleared from the lungs before an adequate alveolar oxygen tension is produced by the 100 per cent oxygen in the inspired gas. Hypoxia due to this cause may be eliminated by increasing the concentration of oxygen breathed when the cabin is intact (Ernsting, McHardy and Roxburgh, 1961). The relationship between the inspired oxygen concentration and environmental pressure necessary to prevent hypoxia following a rapid decompression to 150 mm Hg absolute when 100 per cent is delivered immediately after decompression is shown in Figure 1.

Sudden exposure to a low environmental pressure may be followed by one or more of the manifestations of decompression sickness (the "bends", the "chokes", circulatory collapse or various neurological disturbances). Although theoretically this condition can arise whenever the environmental pressure is reduced to below 380 mm Hg, in practice the incidence of serious decompression sickness is not significant at environmental pressures greater than 300 mm Hg. This condition may be prevented by reducing the amount of nitrogen in the body by breathing a nitrogen-free gas before the exposure to low pressure occurs. Unless denitrogenation is undertaken before the beginning of a flight, the total pressure within a space cabin should not be reduced below 300 mm Hg. Even after a prolonged exposure to an inspired gas composed of 50 per cent oxygen and 50 per cent nitrogen at a total pressure of 380 mm Hg, sudden exposure to 190 mm Hg, the order of the pressure which can be used in available full pressure suits, results in incapacitating decompression sickness in many individuals. Thus, although as will be seen, such a mixed oxygen-nitrogen atmosphere has many advantages, it may result in decompression sickness arising when a full pressure suit is used unless denitrogenation is undertaken before the environmental pressure is reduced further.

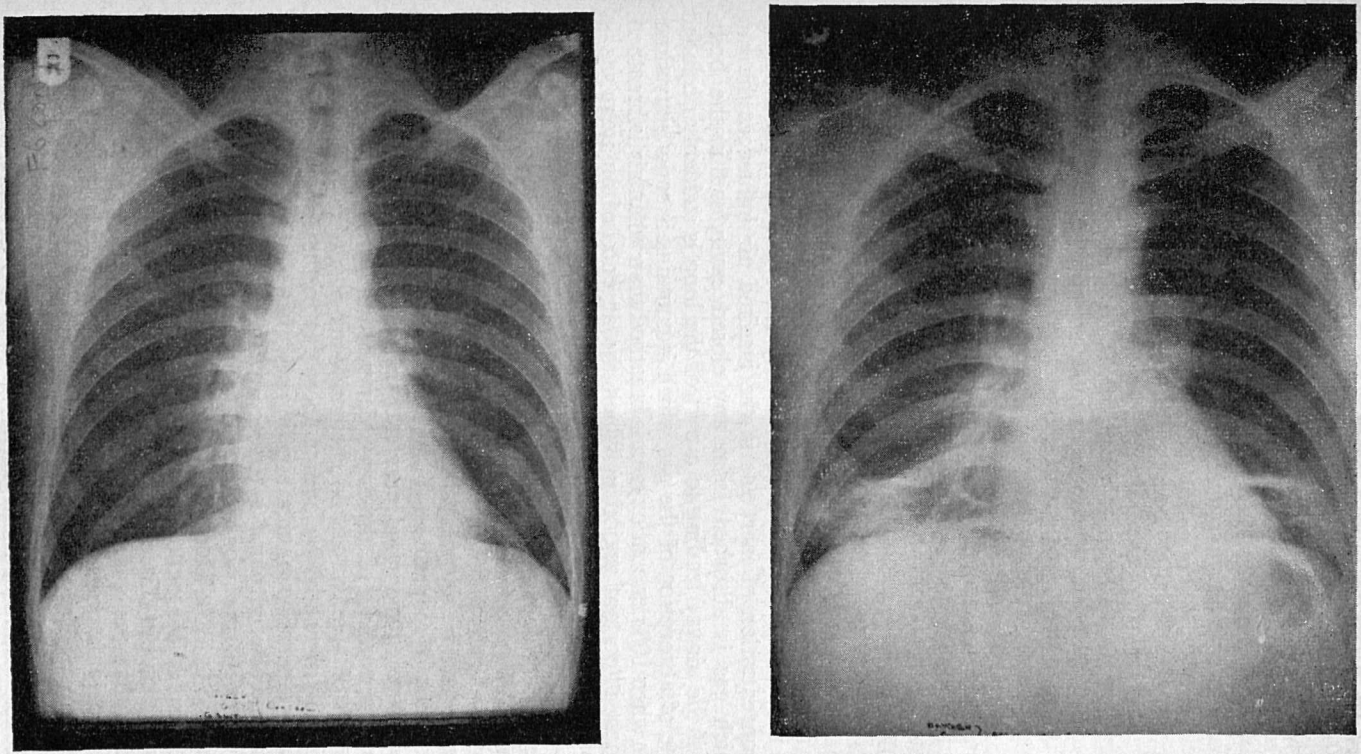


Figure 2. Chest radiographs of a fighter pilot before and after half-hour flight in which he breathed 100% oxygen and was subjected repeatedly to periods of positive acceleration. The post-flight radiographs show considerable collapse in the lower lung fields.

Hypoxia and, in many circumstances, decompression sickness can be avoided by using an environment of 100 per cent oxygen in the cabin of a space vehicle. Further, the engineering problems associated with the provision and control of a sealed cabin atmosphere are simplified considerably by the use of a single gas. There are, however, several physiological disadvantages associated with the use of such an atmosphere. When breathed at ground level, oxygen has a direct toxic effect on the respiratory epithelium and symptoms of pulmonary irritation arise after 12 to 18 hours' exposure to 100 per cent oxygen (Comroe and Dripps, 1950). It has been demonstrated, however, that if the absolute pressure is reduced to less than 380 mm Hg, exposure for up to 14 days to 100 per cent oxygen does not cause any significant impairment of lung function. Thus, if an atmosphere enriched with oxygen is to be used, the partial pressure of oxygen must not exceed 380 mm Hg (Figure 1). Experiments performed in the United States of America in the last six months have suggested, however, that exposure to such an atmosphere for 14 days may produce a haemolytic type of anaemia. This observation is being followed up actively at the present time.

An important feature of the use of 100 per cent oxygen in a space cabin is the consequent absence of any inert gas such as nitrogen. The concentration of inert gas in the inspired air influences the rate at which gas is absorbed from any closed cavity within the body. Thus, if the airway leading to a part of the lung is suddenly occluded the rate of absorption of the gas which it contains is some sixty times greater when 100 per cent oxygen is breathed than when air is breathed. The most important region in which the absence of an inert gas in the inspired air leads to collapse, is the lung. Pilots exposed to positive acceleration whilst breathing 100 per cent oxygen in flight frequently complain of coughing, difficulty in taking a deep breath and chest pain after flight (Ernsting, 1960). This syndrome is associated with marked collapse of the lower part of the lungs (Figure 2) and in one group of aircrew was associated with a mean reduction of the vital capacity of 40 per cent (Green and Burgess, 1962). It is believed that exposure to increased accelerative forces distorts the lungs and prevents ventilation of the most dependent parts. The subsequent absorption of alveolar gas in these regions results in collapse. The condition is alleviated by adding inert gas to the inspired air. The functional signfiance of this condition is that the oxygen content of the systemic arterial blood is reduced by the passage of mixed venous blood through the non-ventilated portions of the lungs. Thus, exposure to +4 "g" for 75 seconds whilst breathing 100 per cent oxygen results in a venous to arterial shunt of about 25 per cent of the cardiac output (Green, personal communication). It is desirable, therefore, that the gaseous environment of a space vehicle should contain as high a proportion of inert gas as possible in order to reduce the incidence and severity of the lung collapse produced by increased accelerative forces or infective processes. The beneficial effects of a given concentration of inert gas in the cabin atmosphere is probably independent of the total pressure. It is apparent from Figure 1 that

there are certain conflicts between the various physiological requirements for a gaseous atmosphere. However, all the requirements except those related to the use of a full pressure suit can be met by using an atmosphere consisting of 50 per cent oxygen and 50 per cent nitrogen (or any other inert gas) at a total pressure between 350 and 760 mm Hg (Figure 1).

Throughout flight the oxygen consumed from the cabin atmosphere by the occupant of a spacecraft must be replaced and the gaseous products of metabolism must be removed. Direct measurements of the metabolic oxygen consumption in space flight have given a mean value over the whole of a flight of 450 ml STP/min. so that the quantity of oxygen required is about 0.9 kg. per man per 24 hours. When the duration of flight is less than several months the most economical atmosphere control system is one in which the oxygen required is carried as such either under high pressure or in liquid form. For longer flights with durations of up to a year or so a chemical recycling system in which oxygen is recovered from the carbon dioxide produced by metabolism may eventually become practical. Biological systems employing photosynthesis for the regeneration of oxygen from the end-products of the astronaut's metabolism have received a great deal of attention although in practice there are numerous problems to be solved before such a closed ecological system can be used in a space vehicle. Whatever system is employed there must be effective removal of carbon dioxide. Exposure to an inspired carbon dioxide tension of between 10 and 20 mm Hg produces headaches, dyspnoea and impaired performance, whilst exposure to higher tensions causes narcosis and death. The carbon dioxide tension in the cabin atmosphere should not exceed 5 mm Hg during flight and thus carbon dioxide must be removed continuously by some form of chemical absorbent such as lithium hydroxide. Certain other waste products, particularly those which are produced by bacterial activity in the large intestine such as indol and skatol are toxic when inhaled. The concentration of these toxic products and of disagreeable odours will increase progressively in a sealed cabin so that they must be removed continuously during flight by cycling the cabin atmosphere through, for example, an activated charcoal filter. Care must also be taken in the selection of materials, such as paint, used within the cabin to ensure that they are completely non-toxic to man.

THE THERMAL ENVIRONMENT

The temperature and humidity of the atmosphere within the cabin of a spacecraft play an important part in determining the comfort and efficiency of the occupant. Man is most comfortable and his performance is best when his mean skin temperature is 33°C. In a normally clothed individual the maintenance of this skin temperature requires an atmosphere, the temperature of which can be varied between 10° and 25°C, which has a water vapour pressure of 10 mm Hg (relative humidity 30%—50%) and in which there is adequate gas movement. The maintenance of the ideal skin temperature is complicated when a full pressure suit is worn since the whole body is then covered by a

layer which is impermeable to water vapour. In this situation the gas which lies in direct contact with the skin is conditioned by distributing cool dry gas to the periphery of the limbs by a network of pipes beneath the suit. This gas then flows back over the surface of the skin to a central exit point. In a space cabin both the cabin atmosphere and the gas ventilating the full pressure suit are continuously recycled and the heat and water vapour added to it by the astronaut's metabolism are removed. The conditioning gas is passed through a heat exchanger and as the gas temperature falls the water vapour condenses out and is removed by a mechanical separator. In the Mercury space-craft heat is extracted from the conditioning gas by boiling a coolant at low pressure. Heating due to passage through the earth's atmosphere at high speed is greatest during the re-entry when the temperature of the air compressed by a ballistic vehicle reaches nearly 10,000°F. Protection against this very high temperature which only exists for a short period, may be provided by a shield which absorbs heat as it melts (the surface of the heat shield of the Mercury spacecraft reaches 3,000°F during re-entry).

NUTRITION

Even in short duration flights, man requires water to drink and food to eat in addition to the oxygen supply which has been discussed in a previous paragraph. The daily requirements of a man working at the level indicated by the Mercury space flight metabolic oxygen consumption (3,200 Cal. per 24 hours) are presented in Table 1.

Table 1. Metabolic balance sheet for a 70 kg man expending 3,200 Cal/24 hrs.

Intake.	**Weight (kg)**
Solid food	0.5
Water	2.2
Oxygen	0.9
Total	3.6
Output	
Solids in urine and faeces	0.1
Water { - sweat and expired gas...	1.0
Water { - urine and faeces ...	1.4
Carbon dioxide	1.1
Total ...	3.6

The quantity of water required increases markedly when the environmental temperature exceeds 25°C owing to the active production of sweat. The detailed dietary requirements are the same as those which apply in every-day life although it will be more economical on a long journey to employ dehydrated foods. Thus the minimum weight of the daily supplies required for one man amounts to 3.6 kg and a similar weight of waste products will be produced during the same period. Thus in a flight lasting 20 days an astronaut will consume his own weight of supplies. As the duration of space flight extends into

weeks some form of regeneration of materials from waste products is obviously necessary if the initial payload is to be economic, although the plant required to perform the regeneration will have considerable weight itself. The regeneration of oxygen from carbon dioxide has already been discussed. The other material which could obviously be recycled is water. In order to maintain thermal comfort the litre of water excreted by the respiratory tract and the skin every 24 hours must be removed from the cabin atmosphere. It is also relatively easy to recover water from urine. The production of food from nitrogenous waste products requires a closed ecological system in which green plants are used.

THE RADIATION ENVIRONMENT

The earth's atmosphere shields us from the intense ionising radiation which pervades space. Most of this radiation is particulate (electrons, protons and occasional nuclei of heavier elements) and can be divided into cosmic rays, the special radiation zones around the earth and occasional local patches in deep space. The cosmic rays, which are found everywhere in space, consist of very high energy particles. Present estimates of the dose rate from this source in deep space suggest that the occupants of a space vehicle would receive between 1 and 50 rads per year so that cosmic rays will only constitute a problem when space travel becomes routine. (Alexander and Rosen,

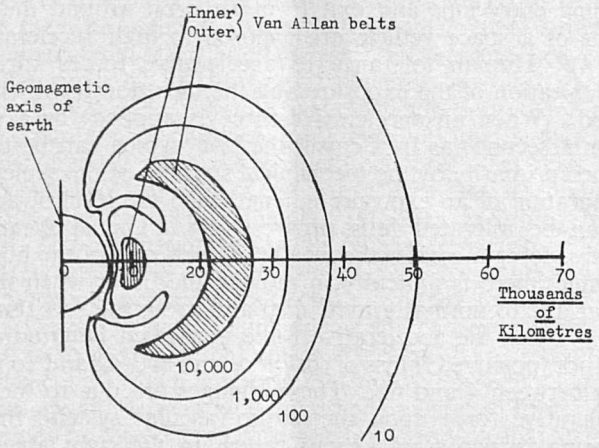


Figure 3. The intensity structure of the trapped radiation around the earth. The horizontal scale shows the distance from the centre of the earth in thousands of kilometres. Each contour joins points of constant counting rates given by the Geiger tubes carried in various satellites. (The numbers 10, 100, 1,000 and 10,000 are actual counts per second.).

1961). The rocket soundings performed in the International Geophysical Year (1957-1958) confirmed that an immense region around the earth is occupied by charged particles (protons and electrons) of very high intensity, temporarily "trapped" in the geomagnetic field of the earth. This radiation is distributed in two distinct belts—the Van

Allen belts—separated by a region of low intensity (Figure 3). The radiation doses to be expected in the depth of the inner belt are of the order of 0.5 to 15 rad/hour, whilst in the outer belt the radiation dosage would be much less, about 10 mrad per hour. The present orbital flights have occurred at altitudes well below the inner Van Allen belt. It is apparent from Figure 3 that the dose received by an astronaut travelling into deep space will vary greatly with the route by which he leaves the earth. Spacecraft could avoid the radiation belts by leaving the earth by way of the polar regions. If the route passes through the Van Allen belts then provided the belts are transverse radially so that duration of the exposure is only 3-4 hours, the total dose will amount to 6 or 7 rads. This order of dose may be compared with the dose required to produce biological effects. A very tolerable risk would be an exposure to a dose of 50 rads which at the worst might double the likelihood of an individual developing leukemia and which would certainly have no significant immediate effects. The evidence at present available suggests that an astronaut, even on a journey into deep space, would not receive a dose as high as 50 rad. These estimates may, however, be modified as newer and fuller measurements of the intensity and biological effectiveness of the radiations in space become available.

THE GRAVITATIONAL ENVIRONMENT

During entry into and exit from an orbit around the earth the occupants of a space vehicle are exposed to high accelerative forces (Figure 4). Human tolerance to accelerative forces varies greatly with the duration of the exposure and the direction in which the force is applied. When an accelerative force is applied for a short time (less than 1 second) as in a crash, the level which can be tolerated is determined primarily by the mechanical strength of the skeletal system. As the duration of an exposure is lengthened the level of acceleration which can be tolerated falls progressively. The application of an accelerative force increases the weight of each part of the body so that, for example, there is difficulty in moving the limbs when the force is twice that due to normal gravity (2g) and at 3g the soft tissues of the face sag. When the accelerative force is applied longitudinally from head to foot (positive G) loss of vision occurs at 3-4g and consciousness is lost at between 4 and 6g. These changes are due to the effects of the accelerative force upon the cardio-vascular system, the primary effects being reduction of venous return to the right atrium due to pooling of blood in the body below heart level and an increase in the hydrostatic pressure of the column of blood between the left ventricle and the brain. Although the tolerance to positive G may be improved by raising the lower limbs, or by the use of a bladder garment fitted to the lower limbs, the levels of acceleration which occur in space travel would produce unconsciousness if applied longitudinally from head to foot. Longitudinal accelerations applied from foot to head (negative G) are even less well tolerated than positive G. Thus at -2g congestion of the vessels of the head and neck occurs and gives rise to severe pain and petechial haemorrhages. The raised pressure in the carotid sinus causes an intense reflex bradycardia and cardiac

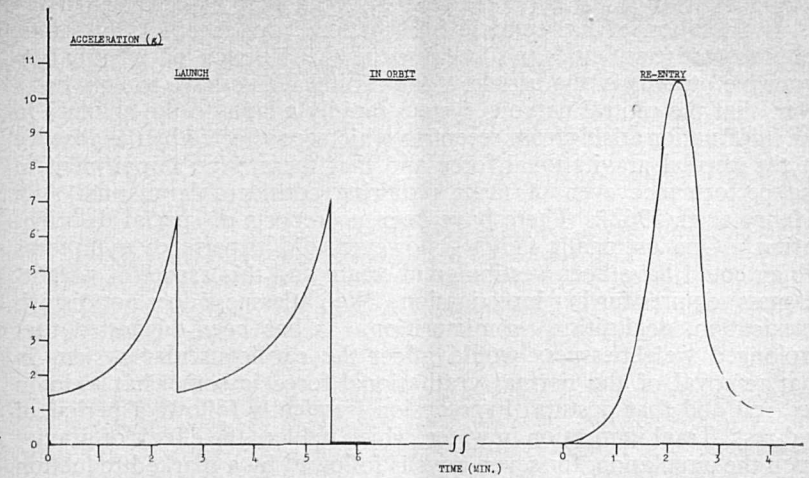


Figure 4. The acceleration environment of an astronaut in an orbiting space vehicle during launch, orbit and re-entry (Mercury spacecraft).

irregularities which may result in unconsciousness. The circulatory disturbances induced by increased accelerative forces are minimal when the force is applied at right angles to the long axis of the body (transverse G). Provided that the body is adequately supported no symptoms, apart from a sensation of increased pressure, occur at transverse accelerations of up to 6g. At higher levels of acceleration respiration becomes increasingly more difficult because of the force tending to compress the chest and abdomen. With adequate support, however, particularly when the accelerative force is applied from the front to the back of the trunk, transverse accelerations of up to 12g cause no disturbance of consciousness, although breathing is difficult and painful. Precise movements of the fingers are possible under these circumstances and it has been shown that an astronaut can perform control movements perfectly well whilst exposed to the acceleration patterns shown in Figure 4. Thus during the phases of flight in which the space vehicle is accelerated and decelerated the astronaut lies in a closely fitted couch which supports the limbs and head as well as the trunk. The couch is orientated so that accelerative force is applied at right angles to the long axis of the body and so that it forces the astronaut on to the couch. The landing on earth will expose the astronaut to a further decelerative force. The forces involved are reduced in the American Mercury project by landing the craft in water. The Russians employ an ejection system whereby the man leaves the spacecraft near to the ground. The astronaut is then subjected to nothing more than the forces associated with a normal parachute landing.

Before the recent manned orbital flights by the Russians and Americans, there was much speculation as to the effects which weightlessness would have upon man. It had been argued that weightlessness would give rise to serious disorientation because of a decrease in and

gross alteration of kinaesthetic information from receptors in joints, tendons, muscles, etc., and because of the absence of information from the otoliths in the utricle. The orbital flights have shown, however, that the central nervous system rapidly adapts to the changes in the information arising from receptors which are affected by the absence of the normal gravitational force and that there is no impairment in the performance even of tasks requiring considerable manual skill (Henry et al, 1962). There have been no reports of special disorientation. One astronaut (Titov), however, did experience symptoms which could have been vestibular in origin and this aspect of weightlessness requires further investigation. Weightlessness does not disturb mastication, deglutition or micturition. It has been suggested that prolonged weightlessness would affect the cardiovascular system in that removal of the normal gratitational force is somewhat akin to bed-rest and that postural hypotension frequently follows a period of bed-rest. Total immersion in water, which reduces the effects of gravity upon the circulation, for seven days is followed by a marked reduction of the pulse pressure and a tachycardia on tilting to the erect posture together with reduction of physical work capacity. Physiological measurements made during the manned orbital flights (ECG and indirect arterial blood pressure) have not shown any signficant changes in the cardiovascular system during weightlessness. One of the American astronauts who completed six orbits exhibited mild postural hypotension for a day or so after landing. Whilst exposure for up to several days to weightlessness has been shown to have no serious effects upon man, it is possible that more prolonged periods will result in disorientation and signficant impairing of cardiovascular function.

FUTURE DEVELOPMENTS

The experience which has been gained by the U.S.S.R. and the U.S.A. in the two years which have passed since Gagarin became the first man to orbit the earth has failed to confirm many of the predicted physiological ill-effects of space flight. These orbital flights have demonstrated that man can work efficiently both during the power rocket flight, re-entry and in the weightless state. His ability to recognise and correct malfunctions of control systems has been amply demonstrated. These flights have also supplied some information with regard to physiological response of man to the space environment. However, far more physiological information is required to enable medical staff on the ground to determine the state of health of an astronaut at any time during flight and in order that the physiological response to the stress of space flight may be more clearly defined. There are many physiological experiments which should be performed in the environment of space. These must, however, await the setting up of an orbiting space laboratory.

REFERENCES.

ALEXANDER, P. & ROSEN, D. (1960). Radiation in space and its possible effects on man. In Pirie, N. W. *The Biology of Space Travel,* London: The Institute of Biology.

COMROE, J. H. & DRIPPS, R. D. (1950). *The physiological basis for oxygen therapy.* Springfield: Thomas.

ERNSTING, J. (1960). Some effects of oxygen breathing on man. *Proc. Roy. Soc. Med.* **53**, 96.

ERNSTING, J. (1963). Some effects of brief profound anoxia upon the central nervous system. In McMenemy, W. H. & Schade, J. P. *Selective vulnerability of the brain in hypoxaemia.* Oxford: Blackwell.

ERNSTING, J., MCHARDY, G. J. R. & ROXBURGH, H. L. (1961). The choice of gas mixture for breathing in high performance aircraft. In Bergeret, P. *"Escape and Survival"*: Agardograph, **52**: Oxford: Pergamon Press.

GREEN, I. D. & BURGESS, B. F. (1962). An investigation into the major factors contributing to post flight chest pain in fighter pilots. *Flying Personnel Research Committee Report No.* **1182**. London: Air Ministry.

HENRY, J. P. (1962). Effects of weightlessness in ballistic and orbital flight. *Aerospace Med.* **33**, 1056.

GENERAL REFERENCE

ARMSTRONG, H. G. (1961). *Aerospace Medicine.* London: Bailliere, Tindall & Cox.

NOTICES

British Empire Cancer Campaign Flag Day

I would like to inform the many workers from Guy's, particularly the nurses, who volunteered flag selling for the British Empire Cancer Campaign on May 28th, and to thank them very much indeed.

I am very happy to be able to report that in spite of the dreadful weather which lasted from early morning, the sum collected was within £7 of the record established in 1961.

ELIZABETH CLARKSON,
Treasurer, Ladies' Committee,
British Empire Cancer Campaign.

11, Grosvenor Crescent,
London, S.W.1.

The Hilda Gration Memorial Fund

May I thank all those who have so generously given to this fund, which now stands at £773 0s. 9d.

Plans to convert a room in the School of Nursing into a Reading Room are now being made, and a board bearing the Sister Tutors' names, similar to the one at present in Matron's Office, will be placed in the School of Nursing.

May I remind those who have not sent in their donations that the closing date will be Tuesday, October the 1st.

B. B. WHYTE,
Secretary, Sub-Committee,
Hilda Gration Memorial Fund.

The Mitochondrion

by A. N. DAVISON,

Biochemistry Department.

It has long been known that animal cells contain a complex fine structure within the cytoplasm (figure 1 overleaf). Thus numerous small elliptical or rod-like bodies, of about 1 μ mean diameter, may be seen with phase contrast or under high power, after staining with a vital dye such as Janus green. It was at first thought that these thread-like granules were micro-organisms living in the cytoplasm (Altman, 1894) but they were shown by Benda (1898) to be present in a variety of different cells from both animals and plants. Benda considered that the granules were an integral part of the cell and he suggested that they be called mitochondria or thread-granules. However, these findings remained controversial for it seemed quite possible that such minute bodies, hardly visible even under highest magnification, were fixation artifacts. Later work on cells in tissue culture produced more convincing evidence. Using this technique with high power and dark ground illumination Honor Fell and her colleagues were able to observe many filamentous mitochondria in the cytoplasm of viable fibroblasts. The mitochondria appeared to be motile and capable of division. Despite these early observations, however, we still know little about the origin of cellular organelles. It has been suggested that mitochondria may be formed from small dense particles found in the cytoplasm of growing cells, alternatively other work supports the view that they originate as an invagination of the plasma membrane or the endoplasmic reticulum. Observations on living cells show that the cell wall and the endoplasmic reticulum, which is continuous with it, are in a remarkably fluid state and one could easily visualise small invaginations arising from either structure.

Great advance in this field followed the development and widespread use of the electron microscope. Mitochondria could now be easily recognised and shown to have a characteristic structure. The particle was found to have an outer limiting membrane, rather like a sausage skin, lined by a second membrane from which bud numerous folds or cristae. These cristae are arranged rather as a series of parallel baffles within the mitochondrion (figure 2). Evidence from X-ray diffraction of myelin and other studies suggest that each membrane is made up of a unit membrane ($\sim$ 60 Å) consisting of protein layers with lipid sandwiched between. This unit membrane structure seems to be one of the fundamental features of the cell for

similar units are found in almost all known biological membranes. Since many important biological processes are centred on membranes, study of this branch of molecular biology has excited the interest of many investigators including some at Guy's.

The Role of the Mitochondrion

Classical biochemical techniques for studying cellular metabolism have employed tissue slices or sometimes breis, prepared by grinding the tissue with sand. The shortcoming of the latter maltreatment were quickly appreciated for it was often found necessary to add cofactors to the homogenate in order to sustain maximal enzyme activity. In 1913, while searching for improved techniques for study-

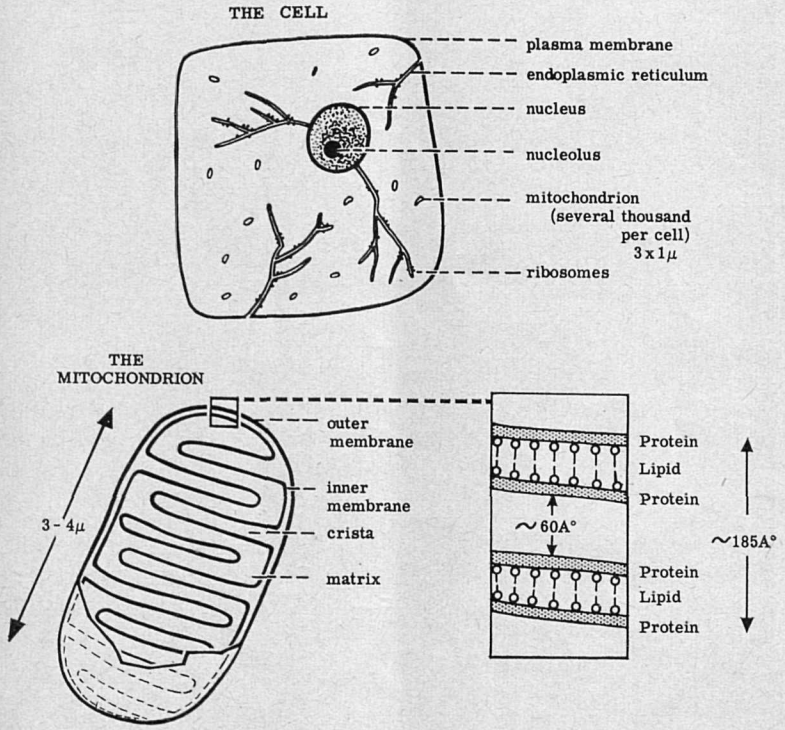


Figure 1.

ing cellular chemistry, Otto Warburg showed that the oxygen uptake of granules obtained by centrifugation of cell-free guinea pig liver extracts accounted almost entirely for the respiration of the extract. Although this early work was to some extent amplified by other investigators it was not until 1947 that Schneider, Hogeboom and

Palade showed that essentially all the succinoxidase and cytochrome oxidase of a liver homogenate was located in the cell granules. Cytological examination indicated that the granules were indeed mitochondria. This work then laid the foundation for subcellular fractionation methods and led to the idea that much of the enzymatic machinery of the cell is located in the subcellular particles. Furthermore, mitochondria are located in areas of high metabolic activity, for example large number of mitochondria are found in proximal tubule cells of the kidney (figure 2), in the retinal rods and in glandular tissue.

Figure 2: Mitochondria from Rat Kidney: proximal convoluted tubule. Magnification x 40,800. By courtesy of Dr. D. N. Landon, Anatomy Department.

Isolation of Subcellular Particles

In the method commonly employed, tissues are removed from an animal as rapidly as possible, washed in ice-cold saline and transferred to a cold homogeniser containing suitable sucrose or saline solutions. The preparation is mechanically disintegrated using a motor-driven pestle (see figure 3). The resultant homogenate is then centrifuged at low speed in a refrigerated centrifuge to sediment cellular debris and nuclei as a pellet in the bottom of the tube. Further sedimen-

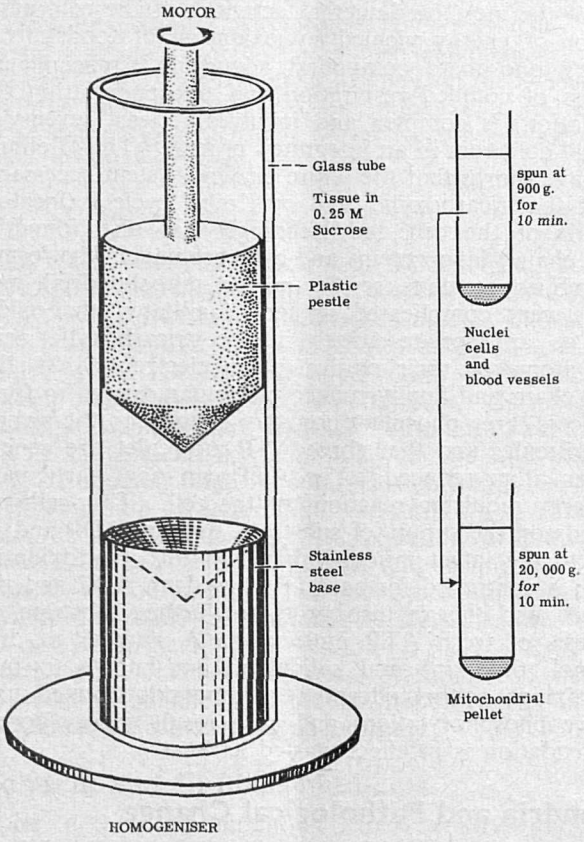


Figure 3.

tation of the decanted supernatant at high gravitational fields brings down the mitochondria in a relatively pure state. This basic technique of differential centrifugation has been extended so that a variety of particles of different size and density may be separated from tissue homogenates. For example, various types of mitochondria have been isolated: sarcosomes from heart muscle, light and heavy mitochondria from the liver. More recently equilibrium centrifugation has been widely employed. In this method, tissue homogenates in

sucrose solution are carefully placed over continuous or discontinuous sucrose solutions of different density. The preparation is centrifuged until particles of equivalent density to that of the surrounding medium separate as discrete fractions.

Energy Transformation and the Mitochondrion

The introduction of the techniques described above has, during the last 20 years, stimulated a great deal of important work in the field of cellular metabolism. Mitochondria have been found to promote one of the most fundamental activities of the cell, namely, the translocation of energy yielded by oxidation of foodstuffs into the high energy phosphate compound adenosine triphosphate (ATP). This process of coupled respiration and phosphorylation (oxidative phosphorylation) is complex and involves at least seventy different enzymes and cofactors in an integrated process. Thus Lehninger and Kennedy have shown that the entire enzyme system necessary for the working of the tricarboxylic acid or Krebs' cycle is located in the mitochondria of the cell and Lehninger has also found that the respiratory chain (flavoproteins and cytochromes) in the form of complete assemblies or units reside on the mitochondrial membrane. The whole very complicated system facilitates the oxidation of substrates at appropriate stages in the tricarboxylic acid cycle. Hydrogen atoms or their equivalent in electrons pass along the respiratory chain and finally reduce molecular oxygen to form water. In this process three phosphate ions are coupled to the same number of ADP molecules and thus three ATP molecules are generated for each oxygen atom reduced. The ATP can now participate in the various energy requiring reactions of the cell. This cellular energy then depends on the supply of substrate, oxygen, ADP and inorganic phosphate to the intact mitochondria. In this way oxidative phosphorylation is controlled for as ATP is used up ADP and phosphate are liberated and this in turn promotes further substrate oxidation and synthesis of fresh ATP molecules. A number of drugs (i.e., dinitrophenol, thyroxine and salicylate) are known to inhibit the synthesis of high energy phosphate compounds (termed uncoupling of oxidative phosphorylation) and as a result energy derived from substrate oxidation is in effect wasted as heat.

Mitochondria and Pathological Change

Administration of carbon tetrachloride to rats results in fatty degeneration of the liver sometimes with resulting necrosis. Even before the appearance of histological damage (e.g., swelling and degeneration of mitochondria) liver homogenates prepared from poisoned animals can be shown to be biochemically abnormal. On centrifugation of such homogenates a creamy layer of damaged mitochondria swollen with fat rises to the surface of the centrifuge tube. Fatty acid oxidation by the mitochondria is found to be completely blocked, and oxidation of pyruvate or citrate considerably reduced. Such findings point to a failure in the normal metabolic activity of the organelle. Further work in vitro indicates that the rat

liver mitochondria from carbon tetrachloride poisoned animals lack the normal capacity of the particle to maintain oxidation of added glutamate. This property of the poisoned mitochondria is similar to that found in mitochondria which have been kept for some time before biochemical assay. The ageing effect can be reversed by the addition of pyridine nucleotide coenzymes. Experiments of this type led Judah and his colleagues of University College to postulate that carbon tetrachloride enters the liver cell and attacks the mitochondria. They suggest that the mitochondrial membrane is damaged with resultant changes in its permeability. As a result the integrated enzyme systems are damaged and unoxidised fat accumulates. Necrosis occurs when complete disorganisation has taken place. This is an interesting examplpe of a toxic effect localised at the subcellular level. Studies of this kind are by no means unique and represent a new approach to pathology which it is hoped can be applied to a better appreciation of human disease processes.

Swelling of Mitochondria

During recent years Lehninger and his associates at the Johns Hopkins Hospital have studied another property of the mitochondrial membrane. They have shown that large amounts of water may be transported into or out of liver and kidney mitochondria in a reversible manner by the relaxation or contraction of the particle membranes. Four physiologically active substances—phosphate, calcium ions, reduced glutathione and thyroxine will cause swelling of mitochondria. Of these agents thyroxine is by far the most powerful. In a physiological medium high in potassium chloride, swelling can be reversed by extrusion of water following addition of ATP. During the process of swelling coupling of oxidation to phosphorylation declines but ATP can reverse this loss and restore oxidative phosphorylation to the normal rate. These processes, therefore, under the control of thyroxine or other agents, may be important in the regulation of cellular metabolism. Lehninger has made the interesting suggestion that these mitochondria not only supply the energy needed for active transport but they also play an important role in the movement of water and electrolytes in the kidney.

Mitochondria and Clinical Medicine

In spite of the vast amount of experimental work on isolated mitochondria, little of this information has yet been utilised in clinical medicine. It is therefore of considerable interest that Ernster and his collaborators have recently reported a study of the enzymatic activity of mitochondria prepared from skeletal muscle biopsies from normal and hypermetabolic subjects. They were able to show a deficiency in the control of respiration by available phosphate acceptors in the mitochondria from cases of thyrotoxicosis and similar conditions. Changes in the biochemistry of pigeon breast muscle mitochondria have also been clearly demonstrated by others following denervation. These events precede histological atrophy of the muscle and most probably contribute to the pathogenesis. It is to be hoped that work

of this kind, combined perhaps with electron microscopic studies, will be more widely employed as an aid to clinical medicine. It is obvious that such advances will only come as a result of collaboration between research workers in different disciplines using increasingly sophisticated techniques.

Conclusion

Some ten years ago, knowledge of the function of mitochondria was scanty: little was known about the fine structure of the particle. To-day the situation is completely changed. Electron microscopy has given us a clear picture of the ultrastructure of mitochondria from a variety of cells. Morphological and biochemical studies have been correlated and enormous advances have been made, particularly in the latter field. There now seems no doubt that the mitochondrion plays the key role in cellular energetics. Further studies of mitochondrial structure and function in both healthy and diseased tissues should prove of value in the medical field.

REFERENCES

DAWKINS, M. J. R. and REES, K. R. (1959). *A Biochemical Approach to Pathology,* E. Anold.

HAM, A. W. and LEESON, T. S. *Histology,* 4th Ed. Pitman's Medical.

LEHNINGER, A. L. (1960). Pediatrics, **26**, 466.

NOVIKOFF, A. B. (191), in *The Cell,* Edited by J. Brachet and A. E. Mirsky, II, 299.

REPRINTS

Reprints of the following articles recently published in the *Gazette* are now available:—

Bermondsey and Southwark, IV., "*Life and Health*", by Roger Blaney.

A Scientific Background to Clinical Medicine:—

1. *Fundamental Genetics* by B. J. Rickard.
2. *The Biochemistry of Genes* by W. L. G. Gent.
3. *Human Chromosomes and their Abnormalities,* by Janet Northfield.
4. *Inborn Errors of Metabolism* by P. F. Benson.
5. *Congenital Abnormalities* by R. G. Spector.
6. *Sex Determination and Development,* by J. L. Hamerton.
7. *Statistics in Clinical Medicine,* by C. P. Wendell-Smith.

These and subsequent reprints in this series, may be obtained, price 1s. each, from the Manager. Gazette Office.

CORRESPONDENCE

Sophie Crees Fund

SIR, The many friends of Sophie Crees, who subscribed to the fund to commemorate her long and faithful service to Guy's, will be pleased to hear that a memorial plaque has been placed in the Ante-Chapel near the right hand door. Mr. C. E. Engel has kindly taken a photograph which is reproduced below.

THIS TABLET IS PLACED HERE
TO THE MEMORY OF
SOPHIE CREES
AS A TOKEN OF ESTEEM AND
AFFECTION BY PAST AND PRESENT
STUDENTS AND HER MANY FRIENDS.
HER DEATH ON JUNE 27. 1962
AT THE AGE OF 88 TERMINATED
70 YEARS OF DEVOTED SERVICE
TO GUY'S HOSPITAL.

The donations from past and present Guy's men exceeded the cost of the plaque by over fifty pounds. It was suggested that the balance should be used to form a Sophie Crees Benevolent Fund for assisting members of the female domestic staff on the recommendation of the Domestic Staff Manager, and the House Committee at their meeting on 11th June, 1963, agreed to this scheme.

The audited accounts are below:

RECEIPTS.	£	s.	d.	EXPENDITURE.	£	s.	d.
DONATIONS	86	7	7	Messrs. A. R. Mowbray & Company ..	27	0	0
				Guy's Hospital Endowment Fund ..	59	7	7
	£86	7	7		£86	7	7

Audited and found correct.

(J. L. LOCKTON).

Yours, etc.,

J. J. CONYBEARE.

14. St. Thomas's Street.

Expedition to Lipari

SIR, I am sure that readers of the Gazette will be interested to know that the Anatomy Department has this summer organised an anthropological expedition to Lipari, the largest of the Aeolian Islands. The expedition consists of five B.Sc. students from this department, one from University College, four other helpers, and is supervised by myself and my wife. The main work of the expedition will be blood grouping, but other genetic studies, such as colour blindness and so on, will be undertaken. The Aeolian Isles are of particular ethnological and anthropological interest since they form the only continuous stratification of cultures from neolithic times onwards to be found in the Mediterranean. The local people met will be descended not only from the earliest inhabitants of Sicily, but also Greeks, Partheginians, Romans and even Normans, all of whom have conquered in this part of the world in earlier times.

Yours, etc.,

ROGER WARWICK.

Department of Anatomy,
Guy's Hospital Medical School.

Missing Thesis

SIR, I wonder if you would mind if I use your columns to beg the individual for whom I borrowed a thesis, " The Nervus Terminalis" (by Donald Mayor), in September, 1961, to return it to me forthwith. Unfortunately the record of this loan is no longer to hand and the thesis is naturally of considerable value to the department from which it was borrowed. The person who borrowed it, and has kept it rather an unconscionable length of time, must have discussed this topic with me in the Department of Anatomy and may have been a previous member of staff.

Yours, etc.,

ROGER WARWICK

Department of Anatomy,
Guy's Hospital Medical School.

"Scientific Medicine"

SIR, I was delighted to see the present series of excellent articles on " A Scientific Background to Clinical Medicine". This gentle reminder that even the best of clinical medicine must be constantly shored up by scientifically verifiable research is always timely. The value of the series would achieve more permanence if it were possible to publish regular supplements to the Gazette in which the articles comprising such series were collected together. It might also be possible to publish similar supplements, perhaps biannually, consisting of some of the more significant clinical lectures.

Yours, etc.,

ALEXANDER G. BEARN.

The Rockefeller Institute,
New York 21, New York.

We are producing each of the articles in this series in reprinted form as they are published, and these are available, price 1*s., on application to the Manager at the Gazette Office. In view of the difficulty of assessing the demand, we have hesitated to organise bound supplements of such articles, but we hope to be able to provide a limited number of bound copies of these articles at the end of this series in several months time. This number will depend, however, on the number of remaining reprints at that time, but should any reader wish to reserve copies for this purpose we will be pleased to keep them for binding later.*—EDITORS.

REVIEWS

CLINICAL PHYSIOLOGY.

Edited by E. J. M. CAMPBELL, C. J. DICKINSON and J. O. H. SLATER. Second edition. 1963. Blackwell Scientific Publications. Pp. 605. *Price* 57s. 6d.

There is no doubt that Blackwell Scientific Publications to-day provide a fascinating alternative to the giant standard textbooks of medicine for general reading, both for interest and for qualifying and higher examinations. Indeed many of their monographs may be considered required reading for the latter, and " Clinical Physiology " is certainly in this group. The last edition was so successful that it was reputedly read even by consultants, thereby rendering obsolete many telling points previously scored by sycophantic registrars. The present edition contains two new chapters, one on the nervous control of movement, the other on energy relationships at both a cellular and corporate level. However, the best chapter as before is that on respiratory physiology.

Some pages are visually confusing because the authors indulge too readily in the use of symbols and parenthetical examples, but none can quarrel with the content.

A. P. HOPKINS.

CONTROL OF INFECTIONS IN HOSPITALS:

Hospital Monograph Series No. 12, by J. C. COLBECK. American Hospital Association, Illinois. 1963. Pp. 166. *Price* $2.

This monograph, as the author states in a foreword, is intended to provide practical guidance in the prevention and control of infections in hospitals, in the light of present knowledge. The author, who is a Guy's man, is well known for his own contributions in this subject and writes with authority and experience.

The first part of the monograph consists of 7 chapters covering the problem of infections in hospital, administrative aspects, sources and modes of infection and methods of control, and prevention of infection among surgical patients, in maternity and neonatal units and in other special departments. The next section consists of notes on some infectious diseases. In each of these, the sources of infection, the methods of transmission and methods of prevention and control are summarized. There is a final section consisting of notes on disinfectants and antiseptics.

This is a useful monograph and the author has admirably achieved his aim. He has fairly stated methods in common use in many hospitals and frequently makes it clear that opinion is divided. There are useful lists of references, with titles. Inevitably some of the techniques recommended and some of the views expressed may have to be modified, but the monograph as a whole gives compactly and clearly the essentials of this very difficult and controversial subject.

R. KNOX.

OUTLINE OF HUMAN REPRODUCTION:

by I. MACGILLIVRAY. Livingstone. 1963. Pp. 97. Price 10*s*.

This is a book which I can fully recommend to the student nurse taking her Obstetric Nurse Training Course, and also for the S.R.N. commencing her midwifery training.

My only comments are that in Chapter II ("The apparatus required for childbearing"), the anatomical description is excellent, but more diagrams would be appreciated, e.g. of the Graafian follicle, which many nurses find difficult to understand. Also with regard to Lövset's manoeuvre mentioned in Chapter VIII, photographs or drawings would have crystallized the manoeuvre in the minds' eye of the reader.

The book maintains one's interest, and I am sure that it will stimulate the student to absorb more theoretical and clinical knowledge.

M. E. WOOD.

SPORT

ATHLETICS

The Athletic Club had its last match of the season against the London, on Wednesday, 3rd May, at H.O.P. Both teams were badly depleted due to examinations and the closeness of the end of term. These led to only four members from each club taking part, but a most enjoyable afternoon's athletics ensued, Guy's eventually winning by one point.

On paper, this season appears to have been a very successful one. The Club has been placed third and second in the University and United Hospitals' Championships respectively, and has only lost one of its other matches. However, the turn out to most matches has been poor, and if the improvement that has been made over the last two seasons is to be continued next season, the number of active members of the Club will have to increase significantly. The situation will be made all the more critical by the departure of D. Waters before the start of next season. He has had a distinguished career in both Hospital and University athletics, and it is fitting that his last season at Guy's has been his best ever. However, much as the Club will miss his all-round ability next season, it is to be hoped that his departure will stimulate into greater activity some of those who have been content to let others do the work.

D. Cooper and A. Winskill have both run for United Hospitals. A. Winskill won the 120 yards Hurdles against Birmingham University and the Metropolitan Police, and D. Cooper was fifth in the half-mile in the latter match.

A. Winskill was awarded a University of London Half Purple.

D. Waters and R. Morris both competed in the A.A.A. Championships at the White City. Waters came third in his heat with the creditable time of 15 secs., and Morris just failed to qualify for the final in the high jump.

BOAT CLUB

The coxless IV completed the season's rowing by entering four of the major British regattas, and acquitted itself commendably against very strong opposition in two of these.

At Reading Regatta the IV was drawn against the holders of the Junior-Senior Cup, the University of Bristol, a crew which had considerable success at Henley three weeks later. Guy's had a rather scrappy start, Bristol taking a canvas off the hospital, a lead which they managed to increase slowly to one length by the half-way stage. Guy's continued to press hard and Bristol could not increase this slender lead, but managed to hold off a fine finishing burst by the hospital in the last minute to win by one length.

In the Senior IVs at Marlow Regatta one week later, the IV rowed one of its best races, looking extremely competent over the entire course. However, they again met strong opposition, this time in the name of National Provincial Bank R.C., one of the most powerful clubs in the country. Guy's had an excellent start, rating 40, and took over half a length from N.P.B. in the first minute, and kept this lead until the half-way stage when N.P.B. were forced to put on considerable pressure to slowly inch past the hospital and to eventually win in a fast time by only one length.

With these two encouraging performances behind it, the IV then proceeded to Henley, where the crew stayed for two weeks to train and take part in the famous regatta. A full report on Henley Royal Regatta will appear in a future edition of the Gazette.

Crew: Bow (Steers): P. D. Venning; 2: N. A. Watson; 3, D. K. C. Cooper (Capt.); Stroke: C. D. Hawes; Coaches: T. N. D. Peet and D. J. F. Gurney, Esq.

CRICKET

In spite of the dreadful weather this summer, only four first eleven games have had to be cancelled, although on several occasions conditions would have betted suited a winter sport. Of 24 fixtures played so far, 13 have been won, 6 lost and 5 drawn. Of the games lost, only Crofton Park have beaten Guy's for two consecutive years, and it was rather aggravating losing to Incogniti and

Stoics considering they had been fairly trounced last year. Against the Rabbits, Guy's were all out for a win. This team consists almost wholly of Crofton Park players, and Guy's were anxious to gain revenge for their previous defeats. This they might well have done but for some negative cricket on the part of the opposition, which enabled them to draw. A good win was recorded over Streatham, Davoodbhoy returning figures of 17 overs, 3 maidens, 38 runs, 6 wickets in a fine spell of bowling. The game against Thornton Heath was an exciting one, which Guy's won by 37 runs. This is a new fixture which was played at Thornton Heath during their Cricket Week. A devastating spell of bowling by Walter produced figures of 12 overs, 3 maidens, 50 runs, 7 wickets, being the best a Guy's bowler has recorded for two years.

In this issue, the Sports section has been compiled by Nigel Knott, our Sports Correspondent being on holiday.

GUY'S v. RABBITS

At H.O.P. Sunday, 14th July, 1963

For the last home game of the current season, Guy's entertained the Rabbits. Guy's batted first on a wicket which had dried out remarkably after the previous day's mopping-up operations with blankets. Huins, in a a very aggressive mood promptly lifted the opening bowler over the square leg boundary for six, and repeated the shot thrice more, failing, however, by inches to obtain further sixes. Silk, at the opposite end, was having a rather frustrating time against some negative bowling, playing model cover-drives but failing to contact on numerous occasions. Huins, attempting another mammoth hit, was bowled having contributed 29 of the first 33 runs in half an hour. Thereafter the only resistance offered by the Guy's batting was by Silk (30) and Price (20), the latter order batsmen being mesmerised by some interesting deliveries from an old Crofton Park enemy, Pope (6—33). The rather meagre looking total of 123, however, proved to be adequate.

Against the Guy's opening attack, it soon became apparent that the Guy's score would prove too much and a fine catch by Edgar brought the first wicket. Incisive bowling by Knott had the first three batsmen back in the pavilion for 23. The Rabbits soon gave up any hope of winning the game and during a period of almost complete darkness were fortunate not to lose further wickets. A fine piece of fielding by Hambleton in the covers caught both batsmen flat-footed in mid-wicket resulting in a run-out. Accurate bowling by Huins removed two more batsmen but Rabbits deferred dourly and aided by dropped catches played out time.

Guy's.

D. Silk, st Nankeville, b Pope	30
T. Huins, b Bennie	29
G. Hambleton, ct Burgess, b Bennie	1
H. MacGregor, st Steadman, b Bennie	0
R. Myall, ct Steadman, b Foster	12
J. Crafts, ct Martindale, b Pope	10
E. Price, ct Nankeville, b Pope	20
D. Biggs, ct Bishop, b Pope	6
A. Edgar, b Pope	4
N. Knott, not out	1
M. Walter, b Pope	1
Extras	9
Total	123

Rabbits, 99—7 wkts.

Bowling.

	O	M	R	W
N. Knott	12	3	24	3
M. Walter	10	2	35	0
T. Huins	17	4	29	2
G. Hambleton	4	0	10	1

Result: Match drawn.

GUY'S v. THORNTON HEATH

Away. Wednesday, 17th July, 1963

Guy's.

H. MacGregor, ct Greenwood-Hone, b Kershaw, J.	20
D. Silk, lbw, b Constable	11
G. Hambleton, ct Poulton, b Constable	40
N. Healey, ct Bayley, b Kershaw, J.	2
M. Joyce, ct Watkins, b Kershaw, M.	10
M. Jones, ct Watkins, b Constable	2
R Myall, c and b Bayley	4
I. Baker, b Greenwood-Hone	6
D. Biggs, ct Penfold, b Kershaw, M.	15
I. Reekie, b Penfold	4
M. Walter, not out	0
Extras	3
Total	117

Thornton Heath, 80. (Walter, 7—50).

Result: Guy's won by 37 runs.

Put in to bat on a fast wicket, Guy's started well. MacGregor and Silk, with some effortless driving, saw thirty on the board in even time. Wickets then started to tumble, but Hambleton stayed, hitting hard and well, after offering a gift catch early on which was refused. By lunchtime seven wickets were down and Guy's looked to be in trouble. A wonderful hot meal was served during the interval and the fruit-machine started its "mystery pay-outs". Afterwards Joyce and Biggs helped the score along but the innings soon ended. The occasional ball had kept low, but with most people getting themselves out it was a very mediocre performance.

Various incentives to hold catches were then arranged in the pavilion but in spite of this several chances were floored before the despairing Walter took his first wicket. The Thornton Heath batting was none too strong, and with Walter bowling magnificently, to return his best ever figures, supported by some enthusiastic field placing, Guy's were victors by tea-time. Being Thornton Heath Cricket Week, celebrations continued far into the night.

NORMAN J. HEALEY.

SHOOTING

Guy's Hospital Rifle Club
U.H. Cup

The above trophy was contested by three teams under good conditions. Guy's won, and in so doing set up a record score for the competition, beating the previous record of 386 in 1959, also set up by Guy's.

Scores.	200*	500*	600*	Total
P. L. Jordan	35	33	31	99
R. Turrance	33	34	32	99
B. D. Glynn	32	31	31	94
M. Thomson	33	33	32	98
				390 ex. 420

London Hospital, 2nd. 381.
Westminster Hospital, 3rd. 372

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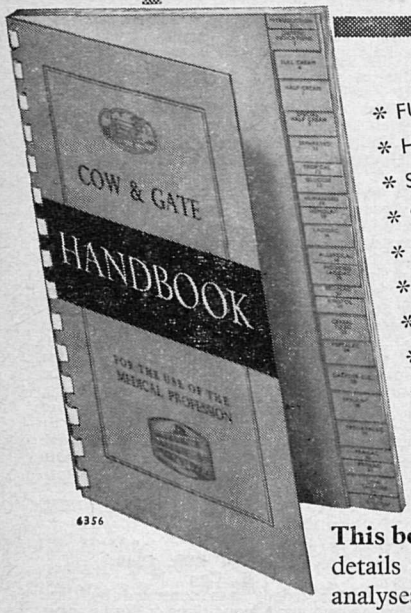

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GUY'S HOSPITAL, S.E.1

Applications are invited for the appointment of **Medical Registrar** from 1st October, 1963, with appointment for one year in the first instance. Forms of application are obtainable from, and should be lodged with, the Superintendent, Guy's Hospital, S.E.1., not later than **7th August, 1963.**

GUY'S HOSPITAL, S.E.1.

Applications are invited for appointment of **G.U. Registrar** from 1st October, 1963, with appointment for one year in the first instance. Forms of application are obtainable from, and should be lodged with, the Superintendent, Guy's Hospital, S.E.1., not later than **7th August, 1963.**

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Applications are invited from medical graduates (men or women) for the post of **Lecturer or Junior Lecturer,** part-time or whole-time, in the **Physiology Department,** commencing on 1st October, 1963. Initial full-time salary within the range £1,200 to £1,400 (Junior Lecturer) or £1,550 to £2,150 (Lecturer) plus £60 London Allowance, according to qualifications and experience, with superannuation and family allowance where applicable. A Science degree or experience in research would be an advantage. Special arrangements may be made to cover School holidays. Application forms can be obtained from and should be lodged with the Dean, not later than **2nd August, 1963.**

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Applications are invited for the post of **Senior Registrar or Registrar** in the **Department of Physical Medicine.** Duties to commence on 1st October, 1963, and appointment to be for one year. Application forms are obtainable from and should be lodged with the Superintendent, Guy's Hospital, London Bridge, S.E.1., not later than **2nd August, 1963.**

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Final F.R.C.S.

May, 1963

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B. A. Ross	J. A. Dyde

Final L.D.S

June, 1963

Surgery

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Patricia A. Freeman	H. J. Pritchard
I. W. McCormick	Hilary M. Barnes
J. W. Balchin	P. L. Jordan

1st L.R.C.P., M.R.C.S.

June, 1963

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R. J. Birts	I. N. Mallah
J. E. M. Cressall	A. J. O'Donnell
J. E. Davies	R. J. V. Ramage
M. F. D'Souza	J. R. C. Sharp
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Physiology

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M. F. D'Souza	R. J. V. Ramage
J. R. Gill	G. E. Ratcliffe
P. H. R. Gill	D. F. H. Wardle
K. Landon	Diana J. Whitfield

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June, 1963

Anatomy and physiology

R. M. Watson

Special Anatomy and physiology

D. C. Hartley	R. M. Watson

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Pathology and Bacteriology: D. J. Boulton, R. F. Leigh
Medicine: D. J. Boulton
Midwifery: D. J. Boulton

NURSING NEWS

Entered:
Sister A. Hughes to Wilks Ward.

Left:
Sister E. Wolstenholme from Wilks Ward.
Sister M. Wood from Victoria Ward.

PAPERS BY GUY'S MEN

Baker, R. W. R., and Nissim, J. A. Expressions for combining standard errors of two groups and for sequential standard error. *Nature*, 1963, **198**: 1020.

Beale, A. J. Viraj interference and interferon. *Annu. Rev. Med.* 1963, **14**: 133.

Black, S., and others. Inhibition of Mantoux reaction by direct suggestion under hypnosis. *Brit. med. J.* 1963, **1**: 1649.

Crabb, H. S. M. Areas simulating carious lesions in the enamel of teeth from dentigerous cysts. *Brit. dent. J.* 1963, **114**: 499.

Denny-Brown, D., and others. Decerebrate phenomena after carotid amobarbital injection. *Arch. Neurol.* 1963, **8**: 662.

Doubleday, F. N. Digestion. *J. Stomat. Soc. Greece*, April, 1963.

Forrest, J. O. Present day instrumentation in periodontal therapy. *Proc. Brit. Soc. Periodont.* 1960-61, **11**: 18.

Galbraith, N. S., and another. Deaths from whooping cough in England and Wales in 1960 and 1961. *Month. Bull. Min. Hlth.* 1963, **22**; 54.

Harrison, D. F. N. Advanced cancer of the head and neck. *J. Laryng.* 1963, **77**; 509.

Holloway, P. J., and others. Dental disease in Tristan da Cunha. *Brit. dent. J.* 1963, **115**; 19.

Irvine, R. E. Progressive patient care in the geriatric unit. *Postgrad. med. J.* 1963, **39**; 401.

Jackson, R. C. Severe renal failure and its management in obstetrics and gynaecology. *Proc. R. Soc. Med.* 1963, **56**; 107.

Jackson, R. C. Artificial kidney. In *Recent Advances in the Surgery of Trauma*. Ed. D. N. Matthews. Churchill, London, 1963.

Jarrett, R. J. Some endocrine effects of two phenothiazine derivatives, chlorpromazine and perphenazine in the female mouse. *Brit. J. Pharmacol.* 1963, **20**; 497.

Kennedy, G. C., and another. Electrolyte conservation during the treatment of diabetes insipidus. *Quart. J. exp. Physiol.* 1963, **48**; 248.

Levin, J., Trafford, J. A. P., Newland, P. M., and Bishop, P. M. F. Chlorphentermine in the management of obesity. *Practitioner*. 1963, **191**; 65.

Lorber, J., and another. Chronic haemolytic anaemia due to Glucose-6-phosphate dehydrogenase. *Proc. R. Soc. Med.* 1963, **56**; 505.

Macdonald, I. Liver and depot lipids in children on normal and high carbohydrate diets. *Amer. J. clin. Nut.* 1963, **12**; 431.

Mallett, Bernard, and another. Follow-up study of schizophrenia and depression in young adults. *Brit. J. Psychiat.* 1963, **109**; 491.

Northfield, D. W. C. The cerebrospinal fluid. *New Z. med. J.* 1963, **62**; 167.

Picton, D. C. A. Effect on normal vertical tooth mobility of the rate of thrust and time interval between thrusts. *Arch. oral Biol.* 1963, **8**; 291.

Picton, D. C. A. Study of normal tooth mobility and the changes with periodontal disease. *Proc. Brit. Soc. Periodont.* 1960-61, **11**; 39.

Ruben, C. M. A scleral buckling procedure. *Brit. J. Ophth.* 1963, **47**; 350.

Witts, L. J., and another. Gastric acidity and gastric biopsy in thyrotoxicosis. *Brit. med. J.* 1963, ii; 20.

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BIRTHS

BINNS.—To Elaine May (née Parker) M.B., B.S., (Lond.) and Bernard A. O. Binns, M.B.B.S. (Lond.) L.R.C.P., M.R.C.S., a son, Patrick Hugh, on the 17th May, 1963, a brother for Helen and Kathryn.

BRADSHAW.—To Dr. and Mrs. D. Bradshaw, a daughter, Amanda Jane, on 7th July, at St. Alban's City Hospital.

CALNE.—To Patsy and Roy Yorke Calne, M.S., F.R.C.S., a daughter, Suzanne Fiona Yorke, on June 20th, at the Lambeth Hospital, a sister for Jane, Sarah and Deborah.

CHANCE.—To Valerie (née Smith) M.S.R., and Roger Chance, B.D.S., L.D.S., R.C.S., a daughter, Sally, on July 14th, at the City Hospital, Exeter.

CRINE.—To Ruby (née Rew) and Geoffrey Crine, a son, Duncan, on June 13th, at Weston-Super-Mare, brother to Simon, Alistair and Timothy.

POOLE.—To Greta Mary (née de Wardt) and Peter Buchanan of Erlegh Lodge, Crowthorne, Berkshire, on July 4th, 1963, at the Canadian Red Cross Memorial Hospital, a son.

WATTS.—To Crystal (née Thomas) S.R.N. and Michael J. Watts, B.D.S., on 4th July, 1963, a daughter, Joanna Henrietta.

MARRIAGES

THOMAS—CAUWOOD.—On March 23rd, at H.M Political Agency, Bahrain, Arabian Gulf, Harry Thomas to Robina Cauwood, S.R.N.

GUY'S HOSPITAL GAZETTE

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Editors *W. G. Reeves*
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PASSIM

Missing Midwives

It is not often that a simple, straight-forward appeal is made through these columns. On this occasion a situation has arisen demanding immediate attention. There has for a long time been a national shortage of midwives. This problem is now sitting on our doorstep at Guy's. The staff of midwives in Victoria is far below its required strength and a return to normal numbers is urgently needed. We have been asked by Matron to appeal to any State Registered Midwives, who would be willing to take up posts in Victoria either full or part-time, now or in the early autumn. Matron is further willing to discuss special hours for day or night duty where necessary, in view of domestic or other commitments. Applications should be sent to Matron's office as soon as possible.

Missing Mothers

While the number of midwives at the hospital has been growing low, the number of patients cared for and delivered on the District has also been falling. In 1938, 450 deliveries were carried out on the District, but this figure has fallen remarkably to 258 deliveries in 1950 and to 114 deliveries in 1960. In the last full year, 1962, only 80 babies were delivered at home under supervision from Guy's. This decline is most probably accounted for by the increasing desire of expectant women for hospital confinement. The trend is reflected in the mounting number of deliveries in Victoria—827 in 1938 to1,072 in 1957 and 1,139 in 1962. There has also been an increase in general practitioner obstetric services, although there are no maternity beds in the Borough of Bermondsey. This change has meant that for the past year or two obstetric dressers on their Extern week have been unlikely to attend more than one delivery. The maintenance of a district obstetric service from Guy's has also employed three to four full-time midwives and this, in view of the present national shortage and in other terms, has been uneconomical. With these factors in mind and in the absence of any obvious solution, the Department of Obstetrics has decided to discontinue District deliveries from the early autumn.

The closure of the District, although a reasonable conclusion from striking facts, is a sad loss. In terms of obstetric training, the experience of the different conditions of domicillary delivery will be removed. The major loss is perhaps the partial depletion of contact with the environment, which the Hospital serves. The close understanding of patients, people and their homes that was gained during the hours of delivery will be lacking. Seeing people in their homes in Bermondsey and Southwark revealed the background not only of obstetric cases, but of all potential patients, who, for varied illnesses, will probably be treated at Guy's. Though other communications will be retained with our neighbours, it is to be hoped that some replacement for the above loss can be found.

Aspects of Normal and Abnormal Antibody Production

by G. PAYLING WRIGHT
Professor of Pathology.

The recognition at the beginning of the present century that many of the defensive reactions of the body against infection depend upon the formation and release into the circulation of specifically-modified plasma proteins termed antibodies has naturally led to a close and enduring community of interests between immunologists and biochemists. Indeed, it would be no exaggeration to state that many recent advances in immunology would not have been possible but for the refiniments effected by biochemists in the separation and identification of the various albumins and globulins in the circulating plasma and tissue fluids. This collaboration between immunologists and biochemists seems likely to become even more productive in the near future by the inclusion of geneticists in the partnership. It may well prove that advances in our knowledge of the biochemical heterogeneity of human beings may throw light on obscure idiosyncracies and reactions to therapeutic drugs.

The Separation of the Different Plasma Proteins

Various methods depending on quite different underlying principles have been applied to the separation of the different types of plasma proteins. Those first to be used, and still employed when proteins require to be separated in large quantities, depend on their differential solubilities in solutions of various salts or of alcohol of differing concentrations. It was by the employment of such a "salting out" technique that it became possible to purify diphtheria and tetanus antitoxins and Felton's antisera against various types of pneumococcus on a scale that allowed their widespread use in prophylaxis and in treatment.

During the last war, when great attention was devoted to the uses of blood and plasma transfusion after haemorrhage, Cohn and his colleagues in Boston (1953) greatly improved methods of separating the various plasma proteins by a fractionation method based on differential solubilities in cold alcohol-water mixtures of varying strengths, salinities and acidities. In this way they were able to prepare on a large scale concentrates of the main plasma proteins—albumin, various globulins and fibrinogen—all of which proved of value in the treatment of casualties suffering from post-traumatic haemorrhage and infection.

In recent years, three physical methods for the laboratory separation of plasma proteins have been developed which have enabled their characterization to be effected with greater precision. The first and still most used technique depends on their differing electrical charges, and therefore on their differing rates of movements in an electrical field—the method commonly known as electrophoresis or cataphoresis.

When an electrical current is applied to a strip of porous paper or a film of a gel, which have been moistened with an appropriate buffer solution, the proteins move along them at different speeds—albumin most rapidly and gamma globulin most slowly—so that when suitably stained later a series of visible, and usually separable, bands can be seen. In this way, it is possible to compare the varying patterns produced by normal and abnormal specimens of plasma. Indeed, the method has now become so standardized that it is commonly employed in almost all clinical pathological laboratories for diagnostic purposes when abnormal plasma protein patterns are suspected.

The second method depends upon the differing sizes and densities of the different proteins, and therefore upon the rates at which they are sedimented in a gravitational field. Largely because this method requires very high speed centrifuges, themselves elaborate and expensive machines, it has been less widely used than the simpler electrophoretic methods. But the method of centrifugation provides information that cannot be obtained by electrophoresis, and its use has disclosed that among the immunoproteins there are at least two, termed 7S and 19S, which differ greatly in size. The molecular weight of the latter being about a million or some six times that of 7S globulin. For this reason, the 19S globulins are sometimes known as the gamma-macroglobulins, though other terms are also sometimes used (Walton, Rowe, Soothill and Stanworth, 1963).

The third and most recently developed method, because of its simplicity, seems likely in time to take a prominent place in this branch of immunochemistry, for it is based on a chromatographic separation by the flow of the protein solution through a long column of a special cellulose. At present, this technique has limitations, but it makes possible the separation of the macroglobulins from the gamma globulins of smaller size, the 7S kind. It has not yet proved adequate, however, for the complete separation of all the various plasma proteins that is possible with ultracentrifugation.

The Immunological Properties of the Globulins

The separation of the various globulins in human plasma on the basis of their differing sizes and surface properties has been accompanied by parallel studies on their immunological properties. Quite soon after the application of electrophoresis as a preparative method for obtaining plasma proteins in a more or less pure form, it was found that the great bulk of those possessing the properties of antibodies were present in the gamma globulin fraction. As the other methods were introduced, they were promptly enlisted in the service of the immunologists. It was therefore of particular interest when it was found that some specific antibodies, notably those concerned with isohaemagglutination against the Rh factor, the Wasserman reagin and the "rheumatoid factor", are wholly or mainly in the macroglobulin or 19S, group, while others, such as those formed against the flagella of the Salmonella, are in the more common 7S group.

As regards immunity to the common infectious diseases, interest attaches to the sizes of antibody molecules for two reasons. First,

size seems to be a powerful operative factor in determining whether or not any particular immune body can pass from the mother across the placenta and confer passive immunity on her infant. As a rule, the macroglobulin antibodies are either absent, or present in lower concentrations, in cord blood than in the mother's serum. Second, molecular size seems to affect the readiness with which an antibody can escape from the blood stream into a site of acute inflammation. As a result of the discovery that the antipneumococcal antibody formed in rabbits had a much smaller size than that produced in horses—one of the species in which this antibody fell into the macroglobulin category—the serum treatment of pneumonia was appropriately modified.

The Source and 'Turn-over' of the Immunoglobulins

Much information has been obtained in recent years on the type of cell that can form and liberate immunoglobulins into the circulation. Formerly, mainly because of their avid phagocytosis of bacteria and foreign proteins from the blood stream, it was inferred that this took place in cells of the reticulo-endothelial system. This belief was encouraged by the finding that the lymph that could be collected through canulas inserted into the efferent ducts from lymph nodes that drained an area of tissue into which particular antigenic material, such as a Salmonella vaccine or a foreign red cell, had been injected several days before, contains the specific antibody at much higher concentrations than are to be found elsewhere in the body fluids.

Several lines of investigation, however, have thrown doubt on this supposition, and have replaced it by one that focuses attention on the plasma cell, a cell that stains red with pyronin and which is present in many tissues but particularly in lymphoid tissues. These cells are deeply basophile, and from the high content of ribonucleic acid in their cytoplasm are regarded as capable of very active protein synthesis. This belief has later been supported by electron microscopy.

The first of the observations to emphasize the importance of the plasma cell was made by Astrid Fagraeus (1948), who found that specific antibodies could be recovered from tissue cultures made from the spleen of previously immunized rabbits, and that the titres were closely related to the number of the plasma cells in the cultured fragment. Further, in a convincing series of experiments, she traced the whole developmental sequence of the plasma cell series.

Subsequent to her work, the presence of specific antibody in the cytoplasm of plasma cells has been demonstrated by the application of fluorescent microscopy (White, 1963). The technique found most useful is one known as the "sandwich method". In this, a solution containing the antigen is applied to thin frozen sections of the tissue, and after the excess has been washed off, a second solution is added which contains specific antibody that has been specially prepared in a rabbit and rendered fluorescent by coupling with fluorescein. In this technique, the antigen applied serves as a sandwich filling between the antibody formed and present in the cell and the fluorescent rabbit antibody subsequently added, and thus permits the localization of the

active cells in the tissues. This method has fully supported the belief that cells of the plasma cell series are responsible mainly, if not wholly, for the formation of antibodies.

The third method is one of particular refinement. When cells taken from an animal that has undergone a course of immunization with some bacterium are cultivated in tissue culture, it is possible to isolate and transfer to single-cell drops individual cells with the aid of microdissection instruments. If dead bacteria of the same or a different variety are now added to these single-cell cultures, only the former become adherent to the antibody-forming cell, and histological examination subsequently shows that this phenomenon of bacterial adhesiveness is virtually limited to cells of the plasma cell series.

The use of radioactive tracer elements has made it possible to determine with much accuracy the "turnover" rates of the different plasma proteins, and as a result it has been estimated that in normal, healthy persons the half-life of the gamma globulins is about twenty days. From this figure, and from knowledge of their total amount in the plasma and tissue fluids (whose gamma globulin space has a volume about twice that of the plasma) it would seem that under normal circumstances the adult man synthesizes between two and two-and-a-half grams of these immunoglobulins daily. Should the body be placed under some acute immunological stress, the rates of production of these proteins may be much greater. Under conditions of malnutrition, it is possible that their rate of formation may decline, but it was of interest that when immunological responses to various injected antigens were studied in the seriously undernourished population of Wupperthal in Germany at the end of the last war, their antibody responses were surprisingly vigorous. To assume for a moment a teleological viewpoint, it would seem that the body tends to curtail other forms of protein metabolism before it retrenches on its humoral defensive mechanisms.

Deficiencies in the Immunoglobulins : Hypogammaglobulinaemia

Under certain conditions, some of them apparently conditioned genetically and others associated with some impairment or deviation of protein metabolism, the gamma globulin concentration in the plasma may become abnormally low. Rarely are these proteins entirely absent, and it has consequently become customary to use the term hypogammaglobulinaemia rather than agammaglobulinaemia, though as Good has pointed out, on the analogy with anaemia, the latter term seems permissable when the concentration of these proteins in the plasma falls below 100 mg. per cent.

(a) Congenital Hypogammaglobulinaemia

This uncommon condition was first described about ten years ago when an examination was made of the electrophoretic pattern of the plasma proteins of an infant which was highly susceptible to recurrent infections. The pattern disclosed that gamma globulins were virtually absent, and the vulnerability to the infections was correctly attributed

to this defect. Since then, numerous similar observations have been made on other infants, and the association of this biochemical anomaly with the immunological incapacity (almost certainly a causal relationship) has been fully confirmed.

A suspicion of congenital hypogammaglobulinaemia is aroused when an infant—nearly always a boy—suffers from a rapid sequence of infections, mostly of the respiratory tract or skin, but sometimes of the digestive tract or meninges (Soothill and Squire, 1963). In times past, such infants usually died from the results of infection in early life, but to-day, through the use of antibiotics, they may survive into late childhood or adult life.

There is now strong evidence that in most cases of congenital hypogammaglobulinaemia, the disease is inherited. Many pedigrees have been constructed in which it appears in brothers or in male cousins, and from their general character the anomaly would seem to be a sex-linked one transmitted through mothers that are heterozygous for the affected gene. But although heredity can be implicated in most instances, cases occur in which no such aetiology is apparent.

With normal infants, synthesis of immunoglobulins begins about the age of three months, and as those acquired passively and transplacentally from the mother are lost through the normal processes of metabolism, they are replaced by others produced by its own cells. This conversion proceeds slowly during the first year of life, by the end of which all the immunoglobulins are autogenous. There seem reasons to believe, however, that this replacement is not automatic, but is to be attributed to the constant bombardment of the antibody-forming apparatus by numerous antigens in early post-natal life. This belief is strongly supported by studies on rats nurtured in germ-free surroundings, for such animals fail to produce gamma globulins in the same way that is found in rats brought up under normal conditions. But if these animals are transferred from their germ-free quarters to others in which they become exposed to the microbiological flora usual in colonies, immunoglobulins begin to appear, and after a time, the gamma globulin concentration in their plasma rises to a value comparable with that found in control rats bred throughout under natural conditions.

In post-natal life, infants come into contact with much highly diversified antigenic material: some is present as proteins in their food, and is absorbed in small amounts unchanged through the mucosa of the intestines, but most is acquired as a result of subclinical infections—the " infectious inapparentes " of Nicolle and Lebailly. That these chance and clinically insignificant infections can leave their traces in the antibody-forming cells of the child is shown very convincingly by the appearance of specific circulating antibodies against diphtheria and poliomyelitis in the plasma of most urban children in this country. Similarly, a failure to receive this specific antigenic imprint is associated with a susceptibility to the particular pathogen that can be life long, as has been several times shown in immunologically-virgin populations. For example, in the Faroe Islands in the

last century and in Greenland recently, measles, when newly re-introduced after many years, spread widely and affected persons of all ages, thus showing that the acquisition of protection against this typically childhood disease is not a result of ageing or physical maturity, but depends on a specific protection usually gained early in life. The ability to benefit from the effects of such subclinical infections, however, are dependent on the presence in the tissues of the specialized antibody-forming cells of the plasma cell series. In children suffering from the effects of hypogammaglobulinaemia, it is the virtual absence of these cells that is primarily responsible for lack of this humoral protective mechanism.

A feature of hypogammaglobulinaemia that has attracted much comment is the difference in susceptibility shown by congenitally affected children to bacterial and viral diseases. Markedly vulnerable to organisms of the former type, as shown by the frequent recurrence of pneumonia, pyoderma and other pyococcal infections, they appear to possess a degree of resistance to many viruses that is little if at all inferior to that of normal children of their age. The reason for this difference still awaits explanation. It is possible that owing to their much smaller size, the amount of an immunoglobulin needed to sensitize a virus particle is smaller than that required for a bacterium, or it may be that in viral infections, some wholly different protective mechanism, such as that associated with the formation of interferon, may be concerned.

(b)Deviations of Protein Synthesis

Under certain circumstances, most of them associated with the growth of certain neoplasms, the synthesis of immunoglobulins may be seriously disturbed. Much the most notable among these tumours is the myeloma, a neoplasm in which the parent cell is almost always of the plasma cell series. In patients suffering from myeloma, the formation of proteins of the globulin-type is very intense, so that their concentration in the plasma may be doubled or tripled, but the proteins produced in such profusion have no relation to the normal immunoglobulins—most or all of which disappear from the circulation. In chronic lymphatic leukaemia, too, the gamma globulin concentration in the plasma may fall, and in some patients, the decline may proceed so far that the term hypogammaglobulinaemia may fairly be employed. That this deviation of protein metabolism may be due to the heavy demands of the hyperplastic leukaemic elements seems a likely explanation for this form of hypogammaglobulinaemia, but the occasional occurrence of lymphatic leukaemia in a close relative of a patient with congenital hypogammaglobulinaemia suggests that there may be some other reason than this *prima facie* one.

The frequency with which patients suffering from myeloma and chronic leukaemia suffer terminally from infection is almost certainly attributable to a deterioration in the efficiency of this humoral defensive mechanism through the inadequate maintenance of circulating specific immunoglobulins. This belief is supported by the inability of normally potent immunizing agents, such as tetanus toxoid, to

bring about the formation of antibodies in such persons—an inability that is closely reminiscent of the incapacity of children with congenital hypogammaglobulinaemia to produce circulating antibodies to such a variety of antigens as typhoid-paratyphoid-pertussis vaccines, tetanus and diphtheria toxoids and poliomyelitis virus.

Concluding Remarks

Recent investigation on the plasma proteins and the anomalies in their synthesis are clearly only a beginning in a much wider study of the genetical control of the production of other types of distinctive proteins. The plasma proteins have understandably been those most closely studied, both because of the ease with which they can be obtained and by reason of their immunological importance. But in time, similar methods will be employed in the exploration of distinctive intracellular proteins. To some extent, early steps in this direction have already been taken, for there is now a growing body of knowledge on the genetical control of certain intracellular enzymes—proteins whose properties in catalysing reactions renders them among the easiest to study. But with time, more will become known of the biochemical heterogeneity of the human race, and with it will come a better understanding of many metabolic disorders, among them the problems of immunological idiosyncracy, that at present seem baffling.

REFERENCES

COHN, E. J., in *Blood Cells and Plasma Proteins*, edited by J. L. Tullis, Chapter 2. New York, 1953.

FAGRAEUS, A., *Acta med. scand.*, 1948, Supplement 204.

GOOD, R. A., KELLY, W. D. ROTSTEIN, J. and VARCO, R. L., in *Progress in Allergy*, edited by P. Kallos and B. H. Waksman, Vol. VI, page 187. Basel, 1962.

SOOTHILL, J. F., and SQUIRE, J. R., in *Clinical Aspects of Immunology*, edited by P. G. H. Gell and R. R. A. Coombs, Chapter 12. Oxford, 1963.

WALTON, K. W., ROWE, D. S., SOOTHILL, J. F., and STAMWORTH, D. R., *Immunology*, 1963, 6, 305.

WHITE, R. G., in *Clinical Aspects of Immunology*, edited by P. G. H. Gell and R. R. A. Coombs, Chapter 9. Oxford, 1963.

NOTICES

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Faculty of the History of Medicine and Pharmacy

Maccabaean prize and Medal

Entries for the 1964 Maccabaean Prize and Medal are now invited for an essay of 5,000 to 7,000 words on some aspect of the history of medicine or pharmacy. Intending candidates, who must be under thirty years of age on 15th March, 1964, may apply for further particulars to the Hon. Secretary of the Faculty, Dr. F. N. L. Poynter, The Wellcome Historical Medical Library, The Wellcome Building, Euston Road, London, N.W.1.

Medical Lesions in the Mouth —seen in Dental Practice

by J. A. P. TRAFFORD

Dental surgeons routinely carry out a careful inspection of the mouth and oropharynx during the course of their daily work. However, unless a patient actually has toothache or a lesion of his gums, he is more likely to attend a doctor. The object of this article is to draw to the dentist's attention some of the conditions which he may see before they are seen by a doctor, or about which he may be consulted during routine dental care. Such a task would merit a textbook of some length and therefore only a brief summary of some of the more common problems will be given.

THE TONGUE

Furring is a very common source of anxiety to many patients who regard it as a sign of ill-health. By far the commonest cause is mouth breathing. This may be associated with nasal catarrh and by the time the patient is seen, it has become an ingrained habit. Heavy smoking is another common cause.

There is, however, some truth in the folk-lore, because in any prolonged or severe fever, furring of the tongue is common and it is also seen in toxic conditions such as uraemia or liver failure. In acute lesions, such as acute peritonitis, furring is a classical sign and it is present in many of the conditions usually grouped under the heading "acute abdomen".

A dry tongue is a guide to the patient's state of hydration. Thus, in the fever, toxaemia and acute abdomen groups, the tongue is dry and furred. In marked contrast, the dry tongue of a diabetic coma is usually clean.

In association with the dry, furred tongue in a sick patient, there may be sordes on the teeth, and secondary infection, but the complication of parotitis seen in earlier days, is now rare.

Atrophic glossitis merely means depapillating inflammation of the tongue. It is frequently seen in the deficiency anaemias of all types and it is worthy of mention that this, of course, includes iron deficiency. Riboflavine and nicotinic acid deficiencies also cause atrophic glossitis and in the former, it is associated with magenta coloured tongue, angular stomatitis and cheilosis. With nicotinic acid deficiency (raw beef tongue), it is particularly the tip and sides of the tongue which are affected, and ulceration is often marked.

Oral antibiotic therapy often produces the smooth sore tongue of atrophic glossitis. This is very common with broad spectrum antibiotics, but is also seen with penicillin, particularly when used in the form of lozenges. Another invader often following antibiotics is thrush, due to fungus monilia albicans. This can also occur primarily in the debilitated and is seen as white patches on the buccal mucosa.

Moelle's Glossitis should need no further comment, as it has recently been the subject of an article in the Guy's Hospital Reports.

Leukoplakia is the name given to the appearance of a white patch or patches on the tongue, which crack and cannot easily be removed, as can fur or thrush. Its main importance is as a pre-cancerous state and it has strong associations with syphilis, excessive smoking, excessive consumption of spirits, addiction to very hot spices and chronic sepsis.

A large tongue is seen in acromegaly, myxoedema, cretinism and mongolism. Amyloid disease causes enlargement and induration, and although it may be primary, attention should be directed to chronic sepsis, rheumatoid arthritis and myelomatosis as possible associations.

Fissuring of the tongue is seen in syphilis, and must not be confused with the so-called scrotal tongue, which occurs in normal people, but is more common in mental defectives, particularly mongols. Another source of confusion is the geographical tongue; so-called due to the cartographic appearance of patchy areas of depapillation. Its only association is occasionally with dyspepsia.

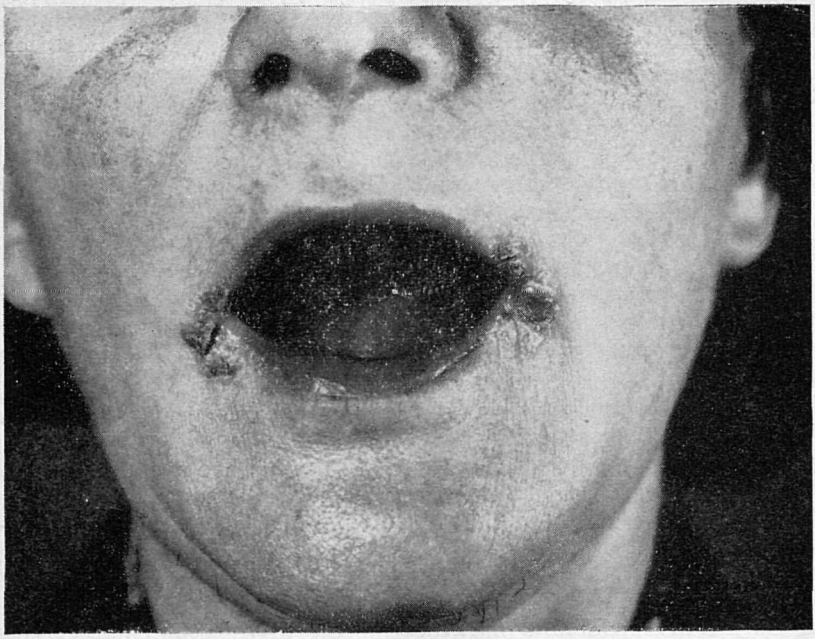
Many tumours and ulcers of the tongue are of surgical interest. The raised rolled edge of the indurated carcinoma must be familiar to all, but the shallow ulcer with undermined edges of tuberculous origin often on the tip of the tongue is now uncommon. So also is the gummatous ulcer of the tongue. The most frequent ulcers seen are aphthous ulcers. These are usually small superficial erosions which are often very painful, and may occur all over the buccal mucosa. They occur particularly in young people and have a varied aetiology. Hypersensitivity to foods has been suggested, but debilitation, local sepsis, psychogenic factors, vitamin deficiencies and hormonal imbalance, all have their supporters. Treatment with iron and vitamins helps some cases, oral hydrocortisone helps more and in females with a marked pre-menstrual incidence, oestrogens are of definite value.

Telanglectasia of the tongue, lips and buccal mucosa are seen in Osler-Weber disease or as it is often called in Guy's, Babington's disease. Single angiomata are not pathognomic of this disease.

Tumours of the lips or jaw, lingual thyroids, anulae and other tumours may be seen, but are not within the scope of this article.

SORE THROAT

A sore throat is a very common presenting symptom and it should be stressed at the outset that overwhelmingly the most common cause of this is a simple tonsillar infection with a virus or a pyogenic organism. The fauces are inflamed and yellow exudate may be seen on one or both tonsils. Scarlet fever is an infection with a particular streptococcus which also produces a tonsillar infection, but due to the production of other specific toxins, it is a more serious disease—e.g., the erythrogenic toxins which produce the characteristic rash. The



Angular Stomatitis.

Left: Fissuring and furring of the tongue in a normal person. Right: Leukoplakia, showing malignant change in the anterior third. (Medical Photographic Dept.).

complications of nephritis or rheumatic fever which follow some sore throats are believed to be due to streptococcal hypersensitivity.

Diphtheria is fortunately a rare disease to-day. Caused by the *Corynebacterium diphtheriae*, it used to be a common and serious ailment, particularly in childhood. Its incubation period may be as little as 24 hours, but more often is 3—4 days. Usually, general symptoms are the presenting feature with the addition of a sore throat. The classical appearance is that of patches of pearly-grey membrane, which are raised from the surface, and have sharply defined edges. These patches tend to spread rapidly and coalesce. It is adherent to the mucosa except in the very earliest stage and on separation leaves an oozing surface. Limitation of such an area to one tonsil is particularly suspicious.

Vincents angina is another cause of an extremely sore throat, which is less commonly seen nowadays. Two organisms, a fusiform bacillus and Vincent's spirochaete are found and infection is often secondary to involvement of the gums. Pain may be slight or severe, and there is superficial ulceration which involves the tonsils, fauces, the inside of the cheek and sometimes the pharynx. The ulcers are covered with a dirty yellow pseudo-membrane and their edges are very hyperaemic. Occasionally the whole affected area may be covered with these, giving the appearance of irregular sloughing masses. Although the membrane may be difficult to separate, and causes bleeding, the milder general symptoms, the soft membrane and the finding of the appropriate bacteria should distinguish it from diphtheria.

Secondary syphilitic lesions involving the mucous membrane of the mouth occur, and give a somewhat similar appearance, but tender, enlarged cervical glands, the lack of fever and an acute or sub-acute onset militate against such a diagnosis. It is this type of syphilis that the oft-described snail track ulcer occurs, whereas the perforation of the palate is usually a tertiary manifestation.

The next three conditions may present much the same appearance and consequently cause considerable anxiety if the patient is medically trained. These are acute leukaemia, infective mononucleosis and agranulocytic angina. In each, a sore throat, with considerable local reaction, with exudate and ulcertation, may be seen. Generally first suspicions are aroused when the conditions fail to respond to antibiotics. A blood film will usually settle the diagnosis, showing either abnormal white cells, glandular fever cells or an absence of granulocytes.

Finally, ulcertative stomatitis and cancrum oris are usually included in any list of sore throats. The former is really a variant of Vincent's angina, with the main brunt of the disease falling on the gums, which become spongy and bleed readily. This appearance can be seen in mercurial stomatitis. Cancrum oris is fortunately a rare disease seen in children, particularly debilitated girls in which a sloughing ulcer forms inside the mouth, which spreads rapidly forming a brawny induration of the cheek or jaw which soon perforates, destroying the face. Death is the usual sequel.

THE GUMS

The gums are really the subject of a complementary article, but mention must be made of the bleeding gums due to general medical causes. Any leukaemia, but particularly the acute variety, may cause this, and of course, scurvy, polycythaemia, the purpuras, aplastic anaemia and mercury poisoning must not be overlooked. Certain drugs may cause hypertrophy of the gums and the best known of these is epanutin, one of the hydantoin group, used in the treatment of epilepsy.

Petechiae may be seen in the mouth and provided blood dyscrasias can be excluded, one of the commonest causes is glandular fever. In this disease, a petechial eruption on the soft palate is a common early sign, and although not confined to this disease, it is suggestive of it.

PIGMENTATION

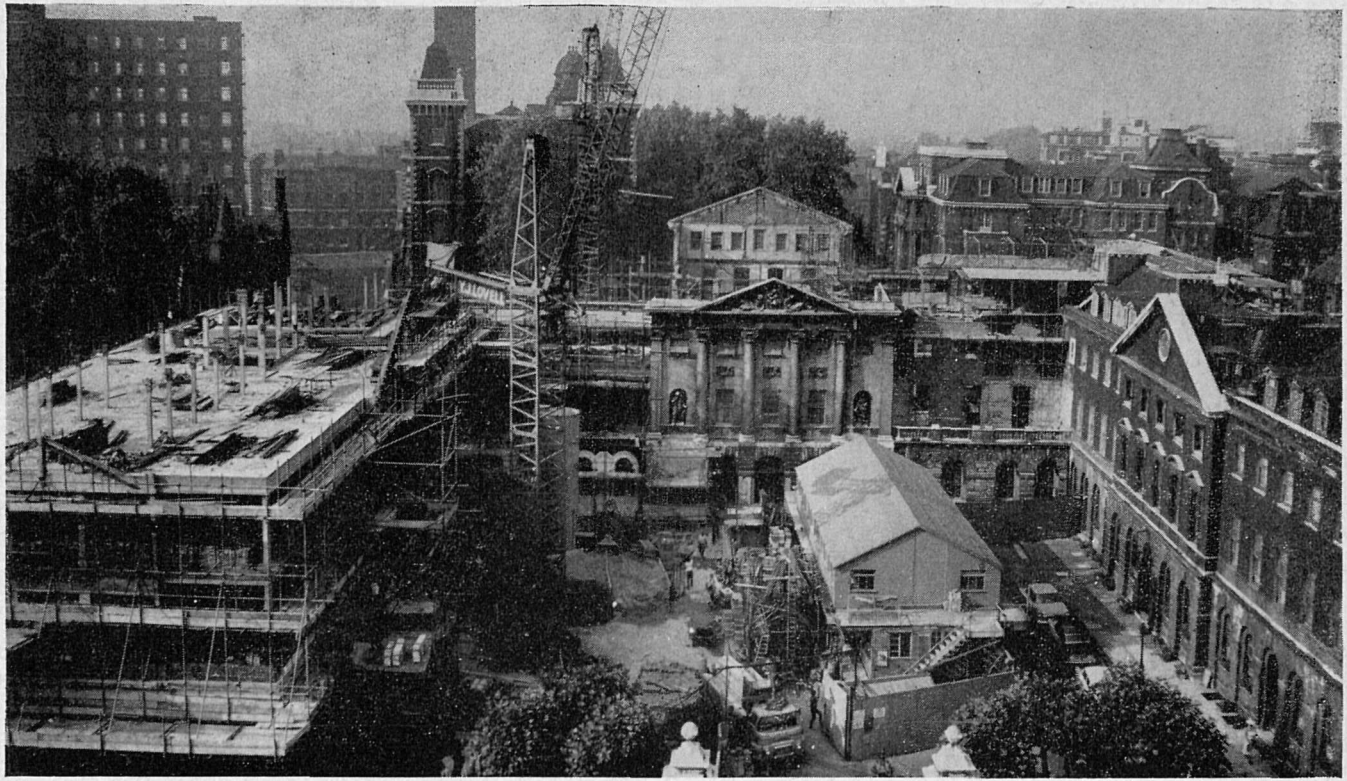
A brief word is necessary about pigmentation in the mouth. This may occur innocently as a racial variation, but its best known medical cause is Addison's disease of the suprarenal glands. In this disease, areas of slaty blue-grey pigmentation are seen on the mucosal surfaces, not only in the mouth but also in the vagina, rectum and no doubt elsewhere, should anybody actually search for it. It is part of a general increase in pigmentation of the skin, particularly of exposed areas, scars, pressure points, such as brassiere straps and of areas usually pigmented, such as the areolae and genitalia. These patients also tan more easily than is normal. A similar pigmentation is seen in two rarer diseases—haemochromatosis and the Peutz-Jeger's syndrome.

No mention of pigmentation would be complete without mention of the lead line on the gums. This is a slaty discolouration, seen on the gum line in people with lead poisoning, who also have a dental infection. Bismuth and mercury may also produce such a line. It may be of interest that there is a patient with a lead line in the medical wards at the time of writing.

In passing it should be mentioned that one of the commonest lesions seen in the mouth by the dentist will be Koplik's spots. These are small white lesions not much larger than a pin's head, with surrounding erythema, and seen best on the inside of the cheek. They are a prodromal manifestation of measles and usually appear about the 10th day after exposure to infection and three or four days before the appearance of the characteristic rash.

PAIN

Finally, although not a lesion in the sense that it can be seen, comment is necessary on the question of face pain. There are three classical diseases for which teeth are often removed before the complete and proper diagnosis has been made: trigeminal neuralgia (tic doulereux), angina pectoris and sinusitis. A proper history obtained with regard to the exact nature of the pain and in particular the precipitating or relieving factors should usually distinguish these from toothache.



[Simon Wood

Rebuilding apace on Guy's House.

REVIEWS

HEALTH—PERSONAL AND COMMUNAL.

by JOHN GIBSON. Faber. 1963. Pp. 193. *Price* 4*s*. 6*d*.

This is the second edition of a book first produced in 1959. The fact that it is now presented as a paper-back has reduced the cost of production, which should be an added attraction to student nurses. The text is well written in a style which is easy to read; the use of headings in bold print make reading even easier.

However, the whole of the subject matter is dealt with in a very superficial manner. For example, in the chapter on infection, the question of passive immunization is dealt with so lightly that very few nurses would appreciate the difference between the different types of immunity or even that there were different types.

For this reason one would hesitate to recommend this as a text book for student nurses unless it was intended simply as an adjunct to pretty thorough class room teaching, or unless more comprehensive books were readily available to the students for reference purposes.

D. MACHIN.

SPORT

CRICKET

One of the mysterious delights of cricket, as with other sports, is the complete unpredictability of forecasting results. In the semi-final of the United Hospitals' Cup, the side was reinforced by the return of several experienced stalwarts from previous cup battles, and was faced with a St. Mary's side that apparently consisted of six cricketers and five enthusiasts. The result should have been a racing certainty.

However, sickness, and over-night long-distance travel by members of the side—or was it over-confidence and lack of application—led to a collapse of the batting. Only J. Norman and N. Knott, who has this season surpassed previous batting with continued success, approached the task with any resolution, but a wretched start was never overcome.

In retrospect, it is easy to criticise. The best testimony to the season lies in the overall results which have shown a will to win by junior members of the side, which should serve the club well in future years. Now the August tour and a match against Old Alleynians remain and no doubt the pavilion will echo to talk of what might have been.

LAWN TENNIS

The tennis team has had an average season—out of thirteen matches played, they have won five and lost eight. Unfortunately altogether eight matches were cancelled, among them some of the most enjoyable fixtures, but the tours to Cambridge and Bournemouth were relatively unaffected.

The membership of the 1st VI has varied considerably through the distractions of exams and hospital organisation, but among other promising newcomers, Sharp and Knight have been outstanding and, together with Newman, they have formed the nucleus of the team.

In the Inter-Hospitals Cup we have now reached the final, with successive victories over The London, Westminster and King's. David Richmond and Chris Newman, as first pair, have the excellent record of having won every match they

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played in the competition this year, and the team largely owes its success to them.

The 2nd VI has had an excellent season under captain Davies, winning all six matches played.

BLUES COMMITTEE

The following Blues were awarded by a recent meeting of the Committee:

Rugby Football

I. A. Baker	*Full Blue*
N. F. Boyd	*Full Blue*
R. W. T. Myall	*Full Blue*
P. Peace	*Full Blue*
A. Kingdom	*Half Blue*
E. Price	*Half Blue*
D. Gourlay	*Half Blue*
A. Fisher	*Half Blue*

Association Football

A. Palmer	*Full Blue*
R. Shepherd	*Full Blue*
A. Atkins	*Half Blue*
J. Cutler	*Half Blue*
W. Davies	*Half Blue*
E. Elias	*Half Blue*
B. Mason	*Half Blue*
V. Holden	*Half Blue*
P. Sheridan	*Half Blue*

Hockey

D. C. E. Loader	*Full Blue*
T. W. Negus	*Half Blue*
A. Hirst	*Half Blue*

Squash

C. Chantler	*Full Blue*
W. A. Norman	*Full Blue*
M. Elliott	*Half Blue*

Boat Club

D. K. C. Cooper	*Full Blue*
P. D. Venning	*Full Blue*
N. A. Watson	*Half Blue*
R. P. Jenkin	*Half Blue*
P. Felling	*Half Blue*
C. P. W. Warren	*Half Blue*

Boxing

B. Penhall	*Full Blue*
B. J. B. Taylor	*Full Blue*
D. Edgar	*Half Blue*
T. Gibson	*Half Blue*
J. Zadek	*Half Blue*

Golf

E. S. Baird	*Half Blue*

Tennis

P. J. Dickinson	*Full Blue*
A. Stoker	*Full Blue*
C. Newman	*Half Blue*

Swimming

D. Barnes	*Full Blue*
K. McGlynn	*Half Blue*
B. Valentine	*Half Blue*

Reports and Results

CRICKET

GUY'S v. STREATHAM

At H.O.P. Sunday, 7th July, 1963

On yet another drab Sunday afternoon, Guy's won the toss and took to the field under an overcast sky. After some rather friendly opening overs Knott succeeded in getting a delivery past one of the openers' defence and bowled him. Almost immediately Davoodbuoy was brought into the attack for Walter, and he claimed a wicket in his second over. Wickets soon began to fall regularly and some well flighted deliveries by Davoodbuoy (6—38) soon had the batsmen in trouble. Huins (3—16) eventually removed the other opener with a good delivery which trapped the batsman leg before. These two continued to bowl consistently and Streatham succumbed for a total of 91.

Guy's began none too certainly, Huins offering a catch with the total at 11. Appleby next joined Silk and these two moved the score to 42 with some fine shots, before Silk placed the ball into the hands of an opposition fieldsman. Some nasty moments followed in which both Hambleton and Myall were smartly dismissed. Sensible batting by Jones, however, soon restored respectability and the Streatham total was passed with five wickets remaining

Streatham, 91 (Davoodbuoy, 6—38; Huins, 3—16).

Guy's.

D. Silk, ct Scott-Brown, b Bishop	19
T. J. Huins, ct Crofts, b Bishop	5
M. Appleby, ct Bateman, b Bishop	29
G. Hambleton, b Bishop	4
R. W. Myall, ct Cabburn, b Bishop	5
M. Jones, not out	20
E. Price, not out	5
Extras	5
Total for 5 wkts.	92

S. Davoodbuoy, A. Edgar, N. Knott, M. Walter, did not bat.
Result. Guy's won by 5 wkts.

Hospitals' Cup Semi-Final

ST. MARY'S v. GUY'S

St. Mary's 247 (Dwyer, 113) (Davoodbuoy, 6 for 62).

Guy's

H. W. MacGregor, ct McCurry, b Goodwin	4
T. J. Huins, ct Moore, b Walker ..	20
M. Appleby, ct Ross, b Goodwin ..	8
G. Hambleton, ct Beynon, b Walker ..	0
J. R. Bernard, b Walker	1
R. W. T. Myall, ct Dwyer, b Moore ..	6
J. W. Norman, ct Cook, b Moore ..	60
J. K. Crafts, b Ross	7
S. Davoodbuoy, ct McCurry, b Moore	31
N. J. Knott, ct and b Coleman	57
M. Walker, not out	0
Total	194

The Guy's Captain won the toss at 11.15 on Monday, July 22nd (it was the hottest day yet encountered this year), and perhaps rather unwisely decided to field. Knott and Walter did their utmost to support his decision by dismissing the St. Mary's opening pair within five overs. When Crafts replaced Knott Guy's were still on top neither Goodwin nor Reid being able to score freely, but a wicket didn't fall until Davoodbuoy trapped the latter batsman with his faster ball. Dwyer then arrived at the wicket, rather "rounder" than during the previous winter and more relaxed, but obviously extremely resolute. Goodwin was eventually caught behind the wicket playing an unusual shot for such a sound player, who never looked like walking. By lunch St. Mary's appeared to be disgruntled and struggling, with their four best batsman out for ninety.

After the recess the home team set about the bowling in no uncertain manner, aided by a series of experimental overs from the more experienced members of the side. Beynon especially hooked with the utmost verve, while Dwyer nonchalantly increased his total. After Beynon's dismissal, the remaining batsman acted as foils to a now more commanding and ferocious Dwyer. Only Davoodbuoy's extreme accuracy was able to curb this rampaging West Indian, and all credit must be given as the bowler was severely handicapped by an intense headache for two thirds of the match. Aided by Appleby, who fielded superbly throughout the match, the St. Mary's innings was brought to a close at 247.

Guy's were now faced with scoring two hundred and forty-eight runs in two hundred and thirty minutes. This was fifty minutes less than the opposition, but nevertheless, not too taxing a task on a very plumb wicket.

A good opening stand, which is really rather important was not forthcoming, MacGregor being caught off his gloves from one of the few good balls delivered before tea. Appleby followed ten runs later, prodding an easy catch to short leg. At tea, two wickets were down for twenty runs; but worse was to follow. Hambleton played several attractive shots, but unfortunately chose the wrong line on each occasion, and was finally caught. Bernard changed first his gloves, then his cap, and finally—his place with a new batsman. Huins relaxed his concentration just once and was caught in the gully. Myall thought he was due for a captain's knock, but wasn't. It was left to Norman to show the other batsmen of the side how to scientifically discombowel a potentially hostile attack. His sixty runs were the most attractive of the day, and he truly established himself as the best number nine the United Hospitals have ever had.

Crafts was unable to match the steadiness of his bowling with his batting, and it was left to the partially drugged Davoodbuoy and effervescent Knott to provide the main resistance of the innings. Knott especially showed complete command of the situation, and scored his first half-century for the Hospital in a minute over the hour. Until he was well caught at one hundred and ninety-four, it looked as thought the game might well be saved. Walter, who had sat expectantly dreaming of his deserved glory as last man in, was cheated by Davoodbuoy's unexpected dismissal with the score still standing at 194.

Guy's therefore relinquished the "Cup" after four years, due mainly to the failure of all but one of the recognised batsmen. If "the game be the thing" this was surely one of the better cup ties offering keenness without undue feeling and very good cricket.

Thanks is due to the player who travelled all the way from Newcastle to play, and also the one who stood down so that a more experienced performer might aid Guy's to try and retain the cup.

Finally our supporters must be congratulated on making the effort to go to Teddington, and it was especially pleasing to see a Hospital Governor taking such a keen interest in the club's progress.

R. W. T. MYALL

LAWN TENNIS

Results.

v. Shooters Hill, away, lost 6—3.
v. K.C.H., home, won 6—3.
v. Queen's, Cambridge, away, won 5½—3½.
v. U.C., home, lost 5—4.
v. Westminster Bank, away, lost 5—4.
v. Queen's, Cambridge, home, lost, 5—4.
v. L.S.E., home, won 7½—1½.
v. Shooters Hill, home, lost 8—1.
v. P.S.O.B., home, lost 6—3.
v. V.C.H., away, won 7—2.
v. West Hants, away, lost 7—2.
v. Winchester, away, lost 6—3.
v. Fitzwilliam House, Cambridge, away, won 5—4.

Inter-Hospitals' Cup

v. London, home, won 6½—2½.
D. Richmond and C. Newman won 3, lost 0.
J. Boyd and P. Dickinson won 1, lost 1, drew 1.
R. Knight and H. Sharp won 2, lost 1.

v. Westminster, won 6—0.
D. Richmond and C. Newman won 2, lost 0.
P. Dickinson and J. Siegle won 2, lost 0.
R. Knight and H. Sharp won 2, lost 0.

v. Kings, won 5—4.
D. Richmond and C. Newman
bt. 1st pair, 5—7, 7—5, 6—3.
bt. 2nd pair, 3—6, 7—5, 63.
bt. 3rd pair, 6—0, 6—3.
P. Dickinson and J. Boyd
lost to 1st pair, 8—6, 4—6, 1—6.
lost to 2nd pair, 4—6, 6—8.
bt. 3rd pair 6—1, 6—1.
H. Sharp and J. Siegle
lost to 1st pair, 6—3, 2—6, 4—6.
lost to 2nd pair, 2—6, 3—6.
bt. 3rd pair. 6—2, 7—5.

LADIES TENNIS MATCH

v. Dartford P.E.

At H.O.P. 22nd June, 1963
Anthea Sutton and Priscilla Heather won 2, lost 1.
Ruth Williams and Wendy Higlett won 1, lost 2.
Hilary Barnes and Janet Ockleshaw won 0, lost 3

HOSPITAL INFORMATION

APPOINTMENTS VACANT

GUY'S HOSPITAL, S.E.1.

Required:—**Two Resident Senior House Officers in the Department of Psychological Medicine,** duties to commence October 1st, 1963. Application forms should be obtained from the Superintendent and returned to him not later than **August 23rd, 1963.**

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Applications are invited for appointment as **Senior Registrar in Neurosurgery.** The appointment will be made jointly by the bodies concerned and will be held alternately at the Guy's-Maudsley Neurosurgical Unit and the Regional Neurosurgery Centre at the Brook Hospital. The appointment will commence in October, 1963, and will be subject to annual renewal

Applicants should have had Registrar experience in Neurosurgery and should have a higher surgical qualification.

Apply to the House Governor & Secretary, Maudsley Hospital, Denmark Hill, S.E.5., for form of application, returnable by **31st August, 1963.**

APPOINTMENTS

UNIVERSITY OF LONDON

Dr. C. W. M. Adams has been appointed to the Readership in Experimental Pathology tenable at Guy's Hospital Medical School.

Dr. I. Macdonald has been appointed to the Readership in Physiology tenable at Guy's Hospital Medical School.

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S. A. Sughayyar
G. I. Tennekoon
I. Vadasz
M. W. Williams

Surgery

J. R. Bernard
C. Chantler
D. K. C. Cooper
N. S. Faithfull
Mehrbanoo Faruhar
C. N. Garstang
R. Kumar
D S. King
R. I. Kennedy
J. H. T. Marshall
A D. Milner
W. A. Norman
M. C. Pearson
D. J. H. Richmond
A. S. Russell
D. B. O. Smith
A. Thomas
M J. Wright
S. M. Wood

UNIVERSITY OF OXFORD

Final B.M., BC.h.,

June, 1963

*J. M. Latham
*J. W. Ogilvie
*B. M. J. Wolfe

*Have completed the examination

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Final M.B. Examination

Easter Term, 1963

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J. R. Bernard
F. H. Foster
R. I. Kennedy
D. S. King
F. Navab

Principles and Practice of Physic

C. Chantler
C. N. Garstang
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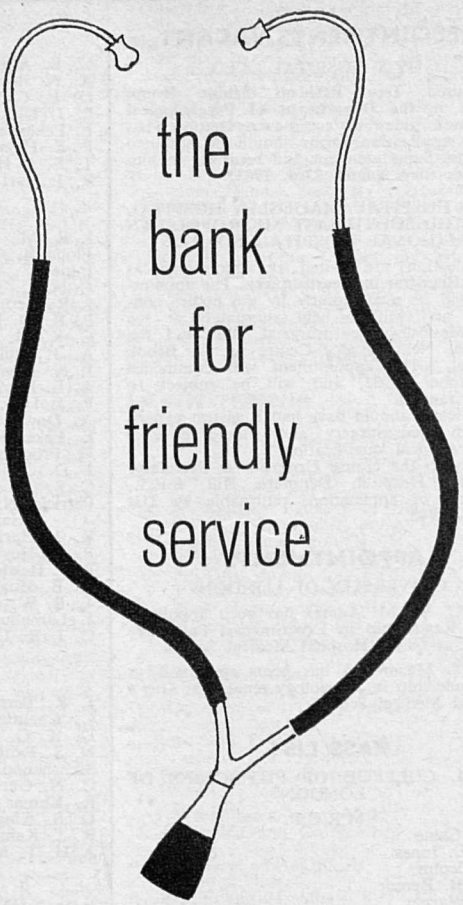

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The Guys Hospital Office, which is opened for your especial use, is under the management of Mr. W. C. Frankum, Southwark Branch, 12-14 Southwark Street, London S.E.1, and enquiries will be welcomed.

Principles and Practice of Surgery

J. R. Bernard
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M. G. F. Crowe
H J. Eldridge
D. G. Fagan
C. N. Garstang
J. R. W. Gumpert
J. R. Hockey
R. I. Kennedy
D. S. King
R. Kumar
C. R. Lucas
A. D. Milner
W. A. Norman
M. C. Pearson
D. J. H. Richmond
A. S. Russell
J. B. M. Shepherd
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Midwifery and Gynaecology

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UNIVERSITY OF LIVERPOOL

D.P.H.

W. G. Rhys-Jones

UNIVERSITY OF LONDON

Ph.D.

(Faculty of Medicine/Dentistry)

March, 1963

M. N. Naylor

M.D.

W. E. Watson

AWARDS

THE NEWLAND PEDLEY MEDAL AND PRIZE FOR OPERATIVE DENTISTRY, 1963

The following awards have been made:

D. H. Griffiths — Medal and Prize

R. P. Juniper, B. Penhall — Certificates (with special commendation) and prize of £20.

THE DAVID FRANK STURDEE THIRD-YEAR-PRIZE, 1963

The following awards have been made:

Miss E. A. Belcher, R. D. Johnson — First and second prize shared

PAPERS BY GUY'S MEN

Bishop, P. M. F. A classification of eunuchoidism. *Proc. R. Soc. Med.*, 1963, **56**, 537.

Broome, J. D. Evidence that the L-asparaginase of guinea-pig serum is responsible for its antilymphoma effects I and II. *J exp. Med.*, 1963, **118**, 99 and 121.

Campbell, A. M. G. Subacute encephalitis. *Proc. R. Soc. Med.* 1963, **56**, 545.

Falconer, M. A. and another. Speech disturbances in temporal lobe seizures: A study in 100 epileptic patients submitted to anterior temporal lobectomy. *Brain*, 1963, **86**, 333.

Farris, C. D. Case of dystrophic dentition in epidermolysis bullosa dystrophica. *Proc. R. Soc. Med.* 1963, **56**, 619.

Galbraith, N. S. and others. A milk-borne outbreak of food poisoning due to *Salmonella heidelberg*. *J. Hyg., Camb.*, 1963, **61**, 175.

Gordon, J. Jaundice associated with halothane anaesthetics. *Anaesthesia*, 1963, **18**, 299.

Meacock, S. P. Indications that nutrition influences dental disease and that the services of a dietician in a general dental practice are useful. *Queen's med. Mag.*, 1963, vol. **55** No. 1.

Shaher, R. H. Syndromes of corrected transposition of the great vessels. *Brit. Heart J.* 1963, **25**, 431.

Shaher, R. H. Electrocardiogram in single ventricle. *Brit. Heart J.*, 1963, **25**, 465.

Shaher, R. H. Coronary circulation in complete transposition of great vessels. *Brit. Heart J.* 1963, **25**, 481.

NURSING NEWS

The following nurses have passed the Final State Examination held in June, 1963:—

Barnes, J. M.
Brown, A.
Charity, J.
Cleghorn, I.
Collins, F. J.
Drewery, K.
Exner, J.
Gittins, J. M.
Glenn, J. A.
Good, F. M.
Gow, C. B.
Gurney, M
Harries-Rees, A.
Hepworth, R.
Hewitt, P.
Hooker, M. S.
Hudson, K. A.
Isherwood, J.
Jones, D. S. M.
Lambie, E. M.
Lamping, C.
McLay, E. R.
Meatyard, T. R.
Parker, P.
Pattullo, F. R.
Pearson, J. M.
Perkin-Ball, S. A.
Petley, A. K.
Rumm, S.A.
Ryan, M. A.
Sandercock, M. E.
Schofield, S.
Scotchman, P. A.
Symmonds, A. P.
Thomas, D.
Watling, M.
Wood. S. E.
Shannon, V. A.
Noon, E. M.
Pontin, C. J.
Potter, E. A.
Shepstone, A. J.
Smith, A. M.
Yates, V. H.

CHANGES OF ADDRESS

R. Boggia, Esq., B.D.S., L.D.S., R.C.S., Dental Officer, R.A.F. Idris (Libya), B.F.P.O. 57.

Dr. K. G. C. Evans, Bindon, 17, Northorpe, Thurlby, Lincs.

A. B. Grantley-Smith, Esq., L.D.S., R.C.S., c/o G. Marks, Esq., 4, Wellington Place, Sandgate, Kent.

Mr. B. Michael Gray, L.D.S., R.C.S., will be in dental practice at, 6a, North Street, Bishop's Stortford, Herts. Tel: Bishop's Stort. 4112.

Dr. M. N. Jacoby, Kent and Sussex Hospital, Tunbridge Wells, Kent. From September 1st, 1963.

Dr. O. Morton. 600, Clive Street, Maida Vale, W.9.

Dr. M. C. Rallings, The Coach House, Holmer Court, Holmer, Hereford. Tel. Hereford 66973

Dr. F. A. W. Schweitzer, Flat c, 72, Shooter's Hill Road, Blackheath, S.E.3.

James Snarey Wright, A.F.C., F.D.S., R.C.S. Eng., H.D.D., F.D.S. Edin., St. Christopher's, Singleton, Chichester.

Mr. Arthur Stone, From 8th August, 1963, at:—27, Harley Street, W.1. Tel. Lan. 0011.

BIRTHS

HOWARD.—To Carole (née Johns) and Lynton Howard, B.D.S., a daughter, Deborah Christine, on June 10th, 1963, at Howick, Natal, South Africa, a sister for Christopher and Andrew.

DEATHS

BERRY.—James Allen Berry, late of Hawkes Bay, New Zealand.

HALL.—On July 20th, 1963, Dr. A. W. Hall, of 16, Beresford Road, Bournemouth.

ROBERTSON.—On 13th July, 1963, Sir Carrick Hey Robertson, K.B., F.R.C.S., in Auckland, New Zealand.

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GUY'S HOSPITAL GAZETTE

Vol. 77
No. 1959
fortnightly
one shilling

24th August 1963

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Editors *W. G. Reeves*
I. A. Baker

Sports Correspondent *E. Tiller*

Guy's Hospital, London

PASSIM

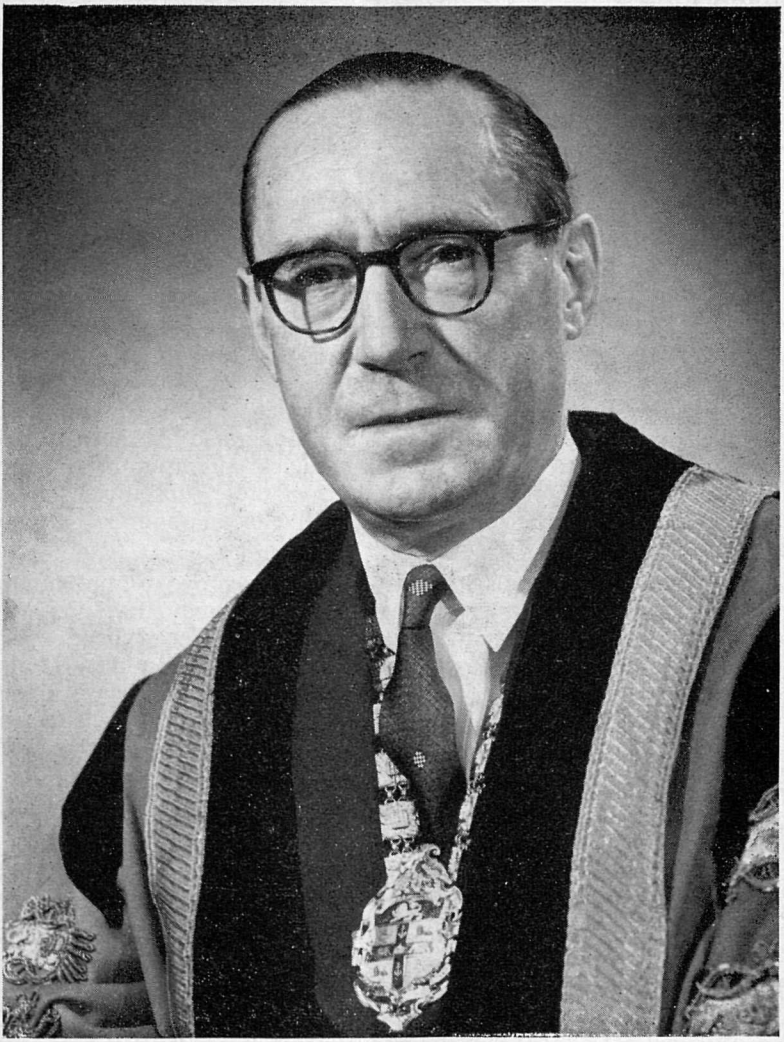
Signs and Symbols

The craze for erecting signs at every possible excuse is a modern one and has, especially on the roads, developed to such a degree that the mind boggles at the kaleidoscope of instructions which greet it. Now it appears, we are to be educated to a new code language, being the unlikely amalgam of the present Ministry of Transport and the existing Continental system. Unfortunately, the resulting compromise has resulted in a collection of symbols more accurately resembling puzzles in an intelligence test. At least, one may be forgiven for making an emergency stop every time one is confronted with an exclamation mark, and we feel that such a punctuated motion will require some acclimatisation. Perhaps the enigmatical '*Toutes Directions*', so effectively used on the Continent, might be worth inclusion : it certainly keeps the traffic in motion.

At a slower pace the pedestrian may pause for longer, although even he is often the victim of his well-meaning guides. The sub-title, "You are here", often signifies a protracted journey ahead only to be relieved by a further instruction which incidentally informs you that "You are (still) here".

But even at Guy's we are not immune from this tendency to adorn all available sites with instructive prose. As the decision to perpetuate the original form of Guy's House is daily becoming an obvious fact, we notice with amazement the latest addition. This is a shiny new plaque by the front gate, announcing "*Historic Southwark*", with the names of Astley Cooper, Bright, Addison and Keats singled out for special mention. Thus Guy's has joined the ranks of such haunts as *Nancy's Steps* and *The Tabard Inn*, and if this distinction runs true to form we feel that it is more than a possibility that Guy's may be included in the itinerary of those who seek what is colloquially known as "Shakespeare country". But let us not be ungrateful for our claim to fame, rather may we suggest that if it is decided to erect its counterpart, "*Historic Bermondsey*", on the other side of the Hospital, that it may be affixed to that most historic of all Guy's buildings—The College.

In the appeal for midwives in our last edition, we inadvertently called upon State Registered Midwives, when State Certified Midwives was intended. We hope that this error has not deterred or bewildered likely applicants.



Sir Russell Brock,
President of the Royal College of Surgeons of England.

(This portrait is reproduced by kind permission of the Editor of the Annals of the Royal College of Surgeons.)

We welcome Mr. James R. Hudson, F.R.C.S., D.O.M.S., to the post of Consultant Ophthalmic Surgeon, following the retirement of Mr. Law

We apologise for an error in a past edition concerning the appointment of Dr. J. A. K. Meikle. This should have read that he was appointed consultant radiologist at Perth, and not Aberdeen.

Immune Diseases and Autoimmunity

by M. H. LESSOF

Immune reactions are usually regarded as having a protective function. The release of antibodies against bacteria helps to eliminate infection, and the development of cellular hypersensitivity has a similar effect. An immune reaction against the body's own tissues is more difficult to understand. Such reactions involve the formation of autoantibodies, that is, of antibodies that react with antigenic proteins from the tissues (autoantigens). It has been suggested that autoimmune reactions of this kind are due to a pathological alteration of antigenic tissue proteins or to an abnormal release of these substances. Alternatively, they may arise from an oversensitive or an abnormal immune response.

In laboratory animals it is not difficult to provoke autoimmune reactions. In such cases experimental diseases may develop, often bearing a striking similarity to human disease. Studies of these experimental disorders have led to the concept that autoimmunity is also a cause of disease in man. Some difficulties arise, however, in distinguishing between allergic and autoimmune disorders. The situation is complicated in man by a variety of infective, toxic, and genetic factors that may also play a part.

The following postulates for the immune origin of a disease have been suggested by Humphrey and White (1963):—

1. At some stage in all cases of the disease it should be possible to demonstrate sensitised cells or antibodies which react with autoantigens.

2. These autoantigens should be capable of inducing the lesions of the disease in experimental animals.

3. The experimental disease should be transferable to other animals by immunologically potent cells or by serum antibody.

Analogies between Experimental and Human Diseases

In 1900, Metchnikoff injected guinea pigs with their own sperm and demonstrated the development of antibodies in their sera which would immobilise other motile spermatozoa. It has since been shown that immunising animals with sperm can lead to an autoimmune testicular disease with cellular infiltration of the seminiferous and epididymal tubules. Many of the infiltrating cells are lymphocytes and macrophages.

In this experimental disorder an autoantigen is injected deliberately, and for obvious reasons there is no exact clinical counterpart.

Histologically, however, the lesions are similar to those of mumps orchitis, which does not appear to be due solely to a virus infection. At the time when mumps orchitis develops no virus is detectable in the testis and the histological findings are suggestive of an immunological reaction. This raises the question of whether the tissue damage caused by infections in man may provoke hypersensitivity or autoimmune reactions which result in further damage to the host. It is possible, for example, that post-infective polyneuritis is an immunological disorder provoked by a virus infection. The progressive liver damage that may follow infective hepatitis might conceivably fall into the same category. With possibilities such as this in mind it is not merely immune reactions that require further study but also the types of stimulus which can provoke a disordered immune response.

Experimental Allergic Encephalomyelitis

Waksman has put forward the view that an autoimmune reaction may account for the neurological damage that occasionally follows virus infections (Waksman, 1959). At the time when the typical central nervous lesions appear in measles encephalitis, no virus is detectable either in the brain or spinal fluid. Also the histological findings resemble those of the experimental encephalomyelitis, which follows when animals are injected with sterile brain emulsion and Freund's adjuvant. Perivascular collections of histiocytes, lymphocytes and plasma cells appear in the affected brain and, in fatal cases, there may be severe vascular damage and tissue necrosis.

The mode of production of experimental encephalomyelitis, its delayed onset—up to three weeks after the immunising injection—and the nature of the lesions all suggest an immunological mechanism. This is supported by the evidence of Paterson (1960) that the disease may be transmitted from one animal to another by means of living lymph node cells. Serum from affected animals and lymph cells from an incompatible donor have so far been ineffective in transferring the disease, making it unlikely that an infective agent is responsible. The most probable explanation of the available evidence is that the disease is the result of a delayed hypersensitivity reaction against myelin. If the analogy between such experimental disorders and human disease can be established, the therapeutic implications may be important. If this type of reaction can be shown to occur as a late complication of infective disorders, then treatment should be directed largely against the allergic response of the host. At this stage the original infective agent may have been eradicated or partly suppressed.

Experimental Thyroiditis

Experimental encephalomyelitis depends on the response of apparently healthy animals to abnormal antigenic stimulation. A number of experimental diseases have now been produced by similar means.

Experimental thyroiditis follows immunisation with thyroid tissue (Rose and Witebsky, 1956). The histological appearance in the thyroid is characterised by cellular infiltration similar to that seen in experimental encephalomyelitis, and it bears a remarkably close histo-

logical resemblance to Hashimoto's thyroiditis in man. Antibodies against several components of thyroid tissue may be demonstrated in the serum of affected animals but attempts to transmit the disease by means of serum have failed. However, Felix-Davies has transmitted the disease by means of sensitised lymph cells (quoted by Doniach and Roitt, 1962).

The Role of Freund's Adjuvant

Freund's mycobacterial mixture facilitates the production of experimental autoimmune lesions. In addition to the conditions already mentioned it has been used in producing autoimmune reactions in the lens of the eye, in the kidney, and in the adrenal gland. This adjuvant probably enhances antigenic stimuli in a non-specific fashion. Pearson found that injections of Freund's adjuvant alone sometimes provoked a flitting arthritis of the small joints in rats. Subsequently, it transpired that many of these rats were infected with pleuro-pneumonia-like organisms (Pearson, 1959). Freund's adjuvant may have potentiated the antigenic stimulus provided by this bacterial infection.

This form of experimental polyarthritis may therefore result from the combined effects of an infection and an enhanced immune response. The possibility of an analogous situation in human disease is of interest, especially when rheumatoid arthritis and other rheumatic diseases are considered. If it proves that infection and an exaggerated immune response may act jointly as aetiological factors, there may yet be a germ of truth in the unfashionable theory that focal sepsis may exacerbate certain human diseases.

Spontaneous Autoimmune Disease in Mice

The experimental diseases that have so far been mentioned are caused by the antigenic stimulation of normal animals. In contrast, it can be argued, it is often the immune system itself which shows evidence of derangement in human immune disorders. Perhaps a closer resemblance to human disease is found in the spontaneous autoimmune disease of a strain of inbred mice which has been described by Holmes, Gorrie and Burnet (1961). These mice appear normal at birth but within a few months develop haemolytic anaemia and splenic enlargement. By the age of nine months a positive Coombs test can be obtained in almost 100 per cent of cases. In addition, periarterial accumulations of lymphoid cells appear in a number of organs and a chronic nephritis sometimes occurs, with features resembling amyloid disease. Living spleen cells have been used to transfer the disease to young mice of the same strain, but mice of other strains are not susceptible. This makes it unlikely that a virus is responsible and virtually certain that the disease depends on an inherited abnormality of the immune system. Cells resembling the human LE cell have been found when these mice are cross-bred with another strain.

Recent Advances in Immunological Techniques

Most of the newer techniques of immunology are simple—at least in principle. Antibody globulins can now be employed as specific chemical reagents for the detection of particular antigenic substances. These reagents are produced by immunising animals with appropriate proteins, allowing them time to develop specific antibodies, and then simply bleeding them. The antisera thus obtained are used in the detection, localisation, and assay of protein hormones or any other antigenic substances. Trace amounts of these antigenic substances can be detected in serum or stained in tissue sections. A variety of immunoassay procedures may be used in their measurement.

Rabbit antiserum to human globulin is utilised in the well-established Coombs test. This detects globulin-coated human red cells by agglutinating them with antiserum. More recent uses for rabbit antihuman serum are found in the fluorescent antibody tests. In these a fluorescent derivative of the antiserum is used to stain deposits of globulin or of other proteins in frozen tissue sections. Serum that is suspected of containing antinuclear factors or antibodies against other tissue components may also be tested in this way. In this case frozen sections are exposed to the test serum and then stained with fluorescent antiglobulins to indicate the exact site of antibody deposition.

Diseases of Man

There are many human diseases with features resembling the immune disorders of animals, but the problems of definition raise difficulties. On theoretical grounds, autoimmune diseases might be held to include all conditions in which immune reactions damage the body tissues—including hypersensitivity reactions against body tissues which have been altered by drugs or chemicals (Waksman, 1962). If this view is taken contact dermatitis, drug hypersensitivity, and many other allergic reactions would be regarded as autoimmune reactions. In that event classification becomes increasingly difficult. Without seeking a precise classification, it may be more helpful to think of a broader group of *immune* diseases. In this category we should include every type of disorder of the immune response, from agammaglobulinaemia to amyloidosis, and from allergy to autoimmune disease. This group of disorders includes hypersensitivity states of all kinds, whether triggered off by drugs, infections, or other agents.

Some of the diseases to be discussed tend to affect females rather than males. This susceptibility of the female is unexplained. The female, in her lifetime, must be capable of dealing with placental and foetal products that are half-foreign and half-native. In adapting to this need, it is possible that the immunological reactions of the female towards her own tissue products have become modified. This, however, is a purely speculative explanation.

Allergic and Autoimmune Blood Diseases

The difficulty of separating allergic and other immune disorders is illustrated by the thrombocytopenic purpura which follows admini-

stration of the drug "sedormid". The drug itself does not appear to elicit any immune response but as a hapten attached to blood platelets it alters the antigenic properties of the larger molecules to which it is attached. The resulting immune reaction leads to platelet destruction and all the clinical features of thrombocytopenic purpura (Ackroyd, 1949). Although an immune reaction is the direct cause of the tissue damage the administered drug is clearly responsible. Similarly, thrombocytopenia may follow the administration of quinine or quinidine. In the case of quinidine, a haemolytic anaemia may be produced at the same time (Freedman, Barr and Brodie, 1956).

When haemolytic anaemia follows quinidine administration the course of events is fairly well understood and the anaemia is attributed to a drug reaction. When similar immune haemolytic anaemias follow infections, the sequence of events is less clear. It is usual, in that case, to invoke autoimmunity as an explanation of the disease, though the distinction between these two conditions is an arbitrary one. In both cases the antigenic groups of the red cells appear to be altered in a way that provokes an immune response. Both are immune disorders but the precise distinction between them is still undefined.

A haemolytic anaemia may also occur in diseases of the reticuloendothelial system itself and is a well recognised complication of systemic lupus and of tumours involving lymphatic tissue. Here there is another possibility—that the disease results from a widespread disorder of immunological function. As in the haemolytic anaemias mentioned earlier, antibodies on the surface of red cells make them more prone to agglutination, lysis, or destruction in the liver, spleen and bone marrow. The presence of this antibody globulin on the surface of cells can be demonstrated by the Coombs test.

The anaemias mentioned so far contrast with the haemolytic anaemias that are due to cold agglutinins. Here the coating substance on the red cells is not an antibody. There is a contrast, too, between these disorders and the congenital haemolytic anaemias, in which the fault lies in the fragility of the red cells.

Diseases of the Thyroid Gland

In the immune anaemias and purpuras, circulating antibodies are easily demonstrated but cellular hypersensitivity is less in evidence. In other immune reaction cellular hypersensitivity is marked and humoral antibodies may be less consistently present. Immune disorders of the thyroid come into this category.

The similarity between Hashimoto's disease and the immune thyroiditis of experimental animals was first noted by Roitt, Doniach, Campbell and Hudson (1956). They drew attention to the lymphocytic and plasma cell infiltration of the affected gland, to the raised serum level of γ-globulin, and to the presence of precipitating antibodies which reacted with thyroid extracts. It was later shown that there may be several antibodies against different thyroid fractions, and Hashimoto's disease is only one of several thyroid disorders in which such antibodies may be found. These antibodies certainly represent autoimmune phenomena, but if they have an important

pathogenic role it is difficult to explain their diversity and their presence in such contrasting diseases as thyroid cancer, thyrotoxicosis, colloid goitre and acute thyroditis.

The one obvious feature common to all these conditions is thyroid destruction. It therefore seems possible that autoimmune reactions are at times merely a response to tissue damage. It follows that the presence of autoantibodies is not, in itself, sufficient evidence of the immune origin of a disease.

In Hashimoto's disease circulating antibodies against the thyroid are present in remarkably high titre, and complement fixing antibodies are more in evidence than in other thyroid disorders. There are also histological changes suggesting hypersensitivity in the thyroid gland. These changes closely resemble those seen in experimental thyroiditis, which has been proved to be an immune disorder by the successful transfer of the disease from one animal to another by means of immunologically competent cells. The serum from patients with Hashimoto's disease, containing complement fixing antibodies, has a cytotoxic effect on thyroid cells in tissue culture. For all of these reasons it is reasonable to conclude that Hashimoto's disease is an immune disorder, whereas the immune phenomena found in other thyroid disorders may represent secondary changes or epiphenomena.

The role of circulating antibody in this disease is still in doubt. *In vivo,* attempts to demonstrate the cytotoxic effect of immune serum have so far failed and, even in tissue culture, the cytotoxic effect can only be seen in cells that have been exposed to trypsin. This suggests that, if humoral antibody has a cytotoxic effect in this disease, it must operate in conjunction with sensitised lymphoid cells or with some other factor which increases the susceptibility or permeability of thyroid cells.

Myasthenia Gravis

In 1961, Miller published his remarkable discovery that the thymus plays an essential role in the development of immunological function. The frequent association of myasthenia gravis with disease of the thymus has long been recognised, and Miller's discoveries have helped to give credence to the belief that myasthenia gravis may be an immune disorder. In support of this view it has been noted that the condition is not infrequently associated with other immune disorders such as haemolytic anaemia or systemic lupus erythematosus. Numerous germinal centres are often found in the thymus, with conspicuous collections of lymphocytes in other organs. Also, antibodies which react with striated muscle can sometimes be demonstrated in the serum of patients. The evidence, however, is far from clear, and so far evidence of an immune disorder has been found in only a small proportion of patients. In this condition, as in several others that have attracted the recent attention of immunologists, it seems likely that we are dealing with more than one disease. One variety of myasthenia gravis is probably the result of an immune disorder and might therefore be expected to respond to treatment with steroids or to thymectomy. It does not follow that the same prescription will be of benefit in those cases which have a different aetiology.

Diseases of the Joints and Connective Tissue

This group of disorders includes rheumatic fever, rheumatoid arthritis, systemic lupus erythematosus, Sjogren's syndrome, and probably should include polyarteritis nodosa, scleroderma and dermatomyositis.

It is still true that rheumatic fever "licks the joints but bites the heart". The deposition of γ-globulin in the heart lesions of rheumatic fever has been shown on several occasions by means of immunofluorescent techniques, and the suggestion that this is an immune disorder has been widely accepted. Kaplan and his colleagues have added to their earlier studies in this field by making an important observation which may explain the connection between rheumatic fever and a preceding streptococcal infection. Kaplan and Meyeserian (1962) prepared a rabbit antiserum to an extract of the cell walls of streptococci and showed that the globulin of this serum deposited on sections of heart muscle, in areas corresponding to the γ-globulin deposits of rheumatic carditis. The antiserum lost its ability to produce this effect after absorption with streptococcal cell wall extract, showing that the finding depended on a cross-reaction between antistreptococcal antibody and a component of heart muscle. As the streptococci had been grown in a medium that was free of all mammalian tissue the most likely explanation was that these particular streptococcal and cardiac antigens had identical immunological properties.

This discovery raises exciting possibilities. Human blood group substances, for instance, are commonly present in pathogenic bacteria, including about 10 per cent of all Gram-negative bacilli. It remains to be seen whether cross-reactions can be demonstrated between antibacterial antibodies and human tissue components in immune disorders other than rheumatic fever.

Rheumatoid Arthritis

The features of rheumatoid arthritis which distinguish it from other diseases of joints and periarticular tissues are the granulation tissue in the synovial membrane, the collection of lymphocytes and plasma cells in subcutaneous nodules, and the presence of rheumatoid factor in the blood. Rheumatoid factor is a macroglobulin antibody which circulates in combination with other types of γ-globulin. Possibly it represents an autoantibody against denatured γ-globulin. Combined with antigen, it may circulate in the bloodstream in the form of an immune complex. That it is not the cause of the rheumatoid lesion is shown by its occasional presence in various conditions which are associated with prolonged antigenic stimulation and a raised globulin level, including bacterial endocarditis, longstanding pulmonary tuberculosis, and cirrhosis of the liver. A condition which is clinically indistinguishable from rheumatoid arthritis may also occur in agammaglobulinaemia, in the apparent absence of either rheumatoid factor or plasma cells. Nevertheless, there is considerable evidence of an immunological disorder in rheumatoid arthritis, and the frequent presence of rheumatoid factor in the bloodstream supports this view.

Some patients, in addition to rheumatoid arthritis, have Sjogren's syndrome, ulcerative colitis or other immune disorders, and others have clinical features of systemic lupus erythematosus or may have antinuclear antibodies in their blood. There is no sharp dividing line between rheumatoid arthritis and some of these other diseases.

Systemic Lupus Erythematosus

Although polyarthritis is a common feature of systemic lupus erythematosus, the joint erosions seen in rheumatoid arthritis are less commonly seen. Other features may also be present—a rash on the cheeks, high fever, anaemia, Raynaud's phenomenon, recurrent pneumonia or pleural effusion, and disease of the kidneys or liver. Antibodies against nucleoproteins are much in evidence in the blood, and perhaps the most charactistic feature of the serum of patients with this disease is the wide range of autoantibodies which it contains. An example is the falsely positive Wasserman reaction which is commonly found. As in syphilis, a positive test indicates the presence of an autoantibody which reacts with a muscle antigen, but in this case an abnormal immune reaction appears to be responsible and not the antigenic stimulation of a spirochaete. Close relatives of patients often have antinuclear factor in the blood and may themselves present with systemic lupus or with a globulin disorder such as hypogammaglobulinaemia or macroglobulinaemia. This evidence strongly suggests a disorder of globulin production or of the immune system itself, rather than a disease caused by an abnormal antigenic stimulus. The suggestion that genetic factors play a part is strikingly reminiscent of the finding of autoimmune disease in Burnet's strain of inbred mice.

Other Diseases

Immune reactions and autoimmune phenomena have been studied in a number of other diseases. These include ulcerative colitis, in which antibodies may be found in the bloodstream which react with colonic extracts. When applied to frozen sections of colon, these antibodies become deposited on the epithelial cells of the crypts (Broberger and Perlman, 1962). Circulating antibodies may also be found in glomerulonephritis, but it is possible that these react with a streptococcal antigen which has become deposited in the glomerulus rather than with the glomerular cells themselves (Seegal et al, 1959). Antibodies may also be found in Addison's disease, reacting in this case with adrenal tissue, and antibodies in pernicious anaemia may react with gastric parietal cells. In progressive liver disorders, immune reactions have been demonstrated using either liver extracts or nucleoprotein.

The significance of these stimulating discoveries is still being assessed.

COMMENT

It is perhaps surprising that autoimmune disorders are not more common, since tissue damage and the release of autoantigens must occur frequently in all living things. The study of a variety of thyroid disorders has shown that autoantibodies are commonly produced

without leading to progressive disease. In fact, a limited autoimmune reaction is probably a normal response to tissue breakdown.

The evidence found in experimental animals suggests that an abnormally strong antigenic stimulation or a pathological immune reaction are required before immune disease occurs. In man both factors probably operate together. In some cases it would appear that an infection, an injury, or a drug may trigger off a progressive autoimmune response in patients with a pre-existing abnormality of the immune system. In others the disease mechanism is more obscure.

The relative importance of these two factors remains uncertain. The problem is an old one—the traditional question of the seed and the soil. At one time there would have been speculation as to whether disease is due to the invasion of evil spirits or to an excess of one of the four humors of the body. In more modern times the discussion centres around the importance of bacteria, viruses, or other toxic substances in causing disease as compared with disorders of the regulating and adaptive mechanisms of the body itself. Immune disorders and autoimmune diseases do not belong exclusively to either of these categories. They frequently belong to both at once.

REFERENCES

ACKROYD, J. F. (1949). *Clin. Sci.* **8**, 235.

BROBERGER, O. and PERLMANN, P. (1962. *J. exp. Med.* **115**, 13.

DONIACH, D. and ROITT, I.M (1962). *Ann. Rev. Med.* **13**, 213.

FREEDMAN, A. L., BARR, P. S., and BRODIE, E. A. (1956). *Amer. J. Med.* **20**, 806.

HOLMES, M. C., GORRIE, J., and BURNET, F. M. (1961). *Lancet* **2**, 638.

HUMPHREY, J. H. and WHITE, R. G. (1963). *Immunology for Students of Medicine.* Blackwell, Oxford.

KAPLAN, M. H. and MEYESERIAN, M. (1962). *Lancet* **1**, 706.

MILLER, J F. A. P. (1961). *Lancet* **2**, 748.

PATERSON, P. Y. (1960). *J. exp. Med.* **111**, 119.

PEARSON, C. M. (1959) in *Mechanisms of Hypersensitivity*, p. 647. ed. Schaffer, J. H., LoGrippo, G. A. and Chase, M. W. Pub. Churchill, London.

ROITT, I. M., DONIACH, D., CAMPBELL, P. N. and HUDSON, R. V. (1956). *Lancet* **2**, 802.

ROSE, N. R. and WITEBSKY, E. (1956) *J. Immunol.* **76**, 417.

SEEGAL, B. C., HSU, K. C. FIASCHI, E. and ANDRES, G. (1959). *Rass. Fisopat. Clin Terap* **31**, 523.

WAKSMAN, B. H. (1959). *Experimental Allergic Encephalomyelitis and the "Auto-Allergic" Diseases*, Kerger, Basel.

WAKSMAN, B. H. (1962). *Medicine*, **41**, 93.

Some Dental Conditions — which may be seen in Medical Practice

by J. N. James

There are many pathological conditions which occur in the mouth, and a considerable number of them are dental in origin. Most patients with toothache go straight to a dental surgeon, but there are some dental diseases on which the advice of a doctor is often first sought, and it is the purpose of this brief article to describe a few of these.

Actual disease of the dental structures will be considered first, then the influence of the teeth and dental appliances on their surrounding tissues and finally the effects of some dental operations.

The dentigerous cyst is a developmental abnormality of the dental tissues which may be seen occasionally in medical practice. It is formed from the dental epithelium surrounding the crown of an unerupted tooth and is, therefore, usually found in children or young adults. Once the cystic change has occurred the osmotic pressure of the fluid contents is maintained at a higher level than that of the tissue fluids by the breakdown of the dead and moribund cells which fall into it. The living epithelial wall is permeable to water but not to the organic molecules inside the cavity, so the hydrostatic pressure inside the cyst is greater than that of the surrounding tissues, the pressure causes bone resorption and the cyst increases in size. All cysts of the jaws lined by epithelium are believed to enlarge in this way. As it becomes larger subperiosteal deposition of bone over the cyst produces a hard swelling of the jaw, but eventually the cyst breaks through this, and then may extend into the soft tissues. The clinical picture depends on the tooth affected and the size of the lesion. The tooth is usually one of the later teeth to erupt, such as a third molar, canine or second premolar and it may be in either jaw. In the earlier stages the swelling is hard, but later it becomes soft and fluctuant and there may be considerable distortion of facial appearance. Intraorally the swelling is usually on the vestibular side of the alveolus and when there is no overlying bone, is bluish in colour. The associated tooth is not visible in the mouth. There are no signs of inflammation unless the cyst has become infected. Treatment is by excision or marsupialisation into the mouth or rarely the antrum.

Acute alveolar abscess is usually caused by infection of the periapical tissues from the root canal of a tooth with an infected pulp. If the infection cannot drain through the canal it tracks through the bone and breaks the surface nearest to the root. For most teeth this is the vestibular surface of the alveolus but for upper second incisors and the palatal root of multi-rooted cheek teeth it may be the palatal surface, and for lower third molars it may be the lingual surface. The further spread of the infection depends on its relationship to the attachments of the muscles about the jaws. If on the oral side of these it points into the mouth, otherwise the main swelling is extraoral.

The clinical signs and symptoms of abscess are present, although the pain usually lessens when the swelling appears, and the affected tooth is tender to percussion. Should the infection not be localised cellulitis may spread along the areolar tissue planes. Treatment of acute alveolar abscess is by draining the pus, usually by extracting the tooth and sometimes with appropriate incisions. Occasionally, inflammation of the periapical tissues is associated with cyst formation from the epithelial rests of Mellassez, the remnants of Hertwig's root sheath in the periodontal membrane. Such dental cysts grow in the same way as dentigerous cysts, and give rise to similar signs and symptoms, except that the tooth of origin may be present in the mouth. The initiating inflammation has usually subsided by the time the cyst is diagnosed.

Inflammation of the tissues around the crown of an erupting tooth is called pericoronitis, and particularly in the case of the lower third molar may be quite severe, giving rise to pain, limitation of movement of the mandible, swelling inside the mouth and externally, and sometimes constitutional symptoms of infection. Pus may be observed emerging from beneath the inflamed gum flap. The condition is quite common in individuals of the age at which the wisdom teeth erupt, and does not necessarily mean that the tooth is impacted. Frequently it is aggravated by the upper third molar impinging on the inflamed tissues when the mouth is closed. Treatment is by gentle irrigation under the gum flap, application of antiseptics, the use of hot hypertonic saline mouthbaths. If the tooth is so placed that it can never erupt completely extraction of the upper wisdom tooth to relieve the trauma during biting is of great value. It is only rarely that antibiotics are indicated. If necessary the affected tooth is removed when the infection has been overcome.

Doctors may be consulted about sore, bleeding gums because the patient believes that there is a systemic cause, and of course, an early symptom of some general conditions such as certain blood dyscrasias is a gingival change. However, by far the commonest cause is local irritation by calculus or food debris. Untreated inflammation of the gingivae soon spreads apically, so that some of the periodontal membrane becomes involved, and a pocket forms around the tooth. If pus can be expressed from the pocket the patient is indeed suffering from that condition which he calls, in a hushed and hopeless voice, pyorrhea. Scaling, instruction in oral hygiene and occasionally periodontal surgery will arrest all but the most advanced cases of this simple periodontitis in the co-operative patient. Vincent's infection, or trench mouth, an acute gingivitis with ulceration of the interdental papillae spreading to the free gingival margins, characteristic halitosis and sometimes conditional symptoms is less common these days, but may be seen occasionally. Treatment is by local cleaning, application of hydrogen peroxide, 4 vols., and in severe cases systemic antibiotic therapy. Local stagnation is an important predisposing cause, and all dental morbidity should be irradicated once the acute phase is over.

Localised irritation of the gingivae by calculus or a sharp-edge on a tooth or filling can produce a hyperplastic inflammatory reaction

of the gum called an epulis, which may cause the patient considerable concern. There are three main types, pyogenic granuloma, fibrous epulis and giant celled epulis, all tending to form pedunculated swellings. The pyogenic granuloma is similar wherever it occurs in the body and is an irregular, red, shiny, soft swelling, incompletely covered with epithelum, producing pus, bleeding easily and usually of rapid growth. It is a moderately acute reaction to the irritation. The established fibrous epulis is a smoothly contoured, pink, firm swelling covered by normal epithelum It is composed of fairly dense irregular fibrous tissue, and in old lesions, there may be little sign of the inflammatory cells present in earlier cases. Some are the end result of pyogenic granulomata, others are from the start more chronic reactions. The giant celled epulis is a smooth, purplish, soft swelling covered with epithelum. Histological examination reveals chronic inflammatory changes with the presence of giant cells. Once regarded as a benign neoplasm, it is now considered to be a peripheral reparative giant-celled granuloma initiated by irritation. Treatment of all these is by excision; recurrence is commoner with the giant celled type, and the extraction of the adjacent tooth may be necessary in this case.

Adamantinoma is a rare neoplasm of the dental epithelium involving the mandible, usually behind the third molar region. It is a locally invasive lesion which may cause expansion of the bone on the outer and inner surfaces. Like a cyst it tends to emerge through the expanded bone and extend into the soft tissues, and if untreated can attain considerable size. Clinically it appears as a hard or partly soft expansion of the posterior part of the body of the mandible causing external swelling. Sometimes the neurovascular bundle is affected and there may be anaesthesia in the distribution of the mental nerve. Pain occurs only if it becomes infected. Histologically there is a varying appearance, with intraepithelial or stromal cysts and sometimes a solid structure. Treatment for advanced cases is resection of the affected part of the mandible, but for less extensive tumours local excision, preserving the lower border of the jaw is preferable.

The teeth, or dental appliances, can initiate changes in the surrounding tissues. A sharp tooth continually rubbing against the tongue, lip or cheek may result in a keratosis or hyperkeratosis clinically manifest as a whitish area on the mucosa. More severe damage can cause ulceration. Such traumatic ulcers are common in relation to the periphery of newly-fitted dentures before the final adjustments have been made, and they also occur when alveolar bone loss has made the denture a poor fit or when some lesion is causing expansion of the bone under the denture. In shape they conform to the denture edge, and are usually surrounded by erythema. Extreme cases may extend right through to the bone, particularly on the lingual side of the mandible. If neglected a badly fitting denture can cause a chronic proliferative inflammatory reaction of the mucosa, producing a mass of scar tissue. This occurs commonly in the sulcus by the irritant edge of the denture and takes the form of several folds of irregular inflamed

fibrous tissue, or there may be a pedunculated leaf-like swelling of the palate where the hyperplastic tissue has become flattened under the denture. There may be a more generalised change in the palate with a conglomeration of reddened sessile or pedunculated mounds. These conditions are termed denture-induced hyperplasia. The treatment of all but the mildest cases is by excision followed by adjustment or replacement of the denture. For very severe cases an epithelial inlay may be required following the excision to maintain the sulcus. Dirty dentures with calculus on the fitting surfaces may harbour monilia albicans and this can produce a localised thrush with a bright erythema confined to the denture bearing area and sometimes easily removed white patches. The condition is called denture sore mouth, and has been mistaken for an allergic reaction to the denture acrylic which is extremely rare. Treatment is by local application of Nystatin, cleaning and sterilising the denture, if necessary renewing it, and instruction in denture hygiene.

Continual biting of the cheek, tongue or lip by irregular natural or artificial teeth sometimes produces a nodule of scar tissue covered with epithelium, which will persist after the teeth have been removed. It appears as a soft or firm pedunculated swelling usually related to the occlusal level of the teeth and covered with normal epithelium unless recently traumatised. The descriptive name fibro-epithelial polyp has been given to this lesion which is of the same nature as a fibrous epulis or denture hyperplasia. Biting of the lip can damage a mucous gland or its duct allowing mucous to leak into the tissues producing mucous extravasation cyst. This is a round, sessile bluish fluctuant swelling on the inner surface of the lip. These conditions are treated by excision and the correction of any predisposing abnormality of the teeth.

Malocclusion of the teeth may be a contributary factor in derangements of the temporomandibular joints. Pain in the joints, clicking and associated masticatory muscle spasm are quite commonly seen, and although dental irregularity is rarely the sole cause it often seems to perpetuate the condition once it has been started by trauma or other strain. Abnormal biting positions due to loss of teeth may have a similar effect. This may be partly due to a slight alteration of the position of the condylar head in the joint cavity and partly to an upset of the normal pattern of feed back control of the muscle activity from propioceptive receptors causing premature muscle contraction and spasm. Dental treatment which may help patients with this joint disfunction includes the correction of irregularities of occlusion by selective grinding of the teeth, restoration of the vertical dimension if there has been overclosure of the jaws, and sometimes the construction of a plastic appliance fitting over the occlusal surfaces of the teeth of one jaw. This opens the bite slightly and allows free lateral and forward movement of the jaws when they are in contact. Quite often such an appliance need be worn for only a few months to allow the traumatic arthritis and muscle spasm to subside, and it may then be left out. Rest, heat and reassurance are of great value

in most cases as adjuncts to dental treatment. Wiring the teeth together is one way of ensuring rest.

Unfortunately, some patients consult their doctors about the after-effects of dental procedures. The most common is bleeding from extraction sockets. All dental surgeons take histories from their patients concerning bleeding tendancies and if there seems to be any systemic factor, refer them to hospital. If there is no suspicious history, they ensure that haemostasis has been established before letting the patient leave. Nevertheless, a certain proportion of patients, either because of a local vascular abnormality or lack of aftercare, do suffer from a reactionary haemorrhage. Patients are usually advised to avoid rinsing the mouth, strenuous exercise or lying down for some hours after extraction, and then perhaps to use a hot saline mouth-bath. Should bleeding start, the best treatment is pressure from a hot saline gauze pack bitten on for a timed fifteen minutes, with the jaw supported by a barrel bandage. If this fails, injection of a little local anaesthetic and the insertion of a mattress suture over the mouth of the socket, followed by another pressure pack will arrest all but the most obstinate cases. Patients who have not taken care following an injection of local anaesthetic may bite the numb tongue, lip or cheek, causing quite severe damage, which they notice when the injection wears off, and they may report to the doctor about this, often believing it to have occurred at the time of operation. Rarely a haematoma may form as the result of dental injection. Last by patients getting severe pain from an extraction socket sometimes consult a doctor. This may be due to the development of a "dry" socket in which the clot has been lost, either by mechanical dislodgement, or by lysis from infection. The lamina dura is exposed and this living bone is very painful. Treatment is by irrigating the socket gently with warm normal saline, and inserting a bland soft pack to fill up the dead space and protect the exposed bone. Antiseptics, antibiotics, anaesthetics and anti-inflammatory agents have been incorporated in such packs, but their main function is protection. A common one is zinc oxide, mixed to a paste with equal quantities of eugenol and olive oil, bound with a whisp of cotton wool. Healing by granulation tissue and separation of any sequestra usually takes at least ten days.

Like the dental surgeon, the doctor sees a great variety of oral diseases, some purely local, others due to a combination of local conditions and systemic disease. This account has included only a few of these local conditions of dental origin well known in dental practice, but which might not be quite so familiar to doctors.

I would like to thank Professor W. E. Herbert for kindly reading this paper and for his helpful advice.

Medicine, and the Two Cultures

by G. L. DAVIES

Those who read the works of Professor Leavis will probably have been struck sometimes by the amount of concentration which one needs to understand what exactly he wishes to convey, and, in this respect, he reminds the reader very much of Emerson, whose Essays present very much the same kind of difficulty. Emerson, however, seems to be consistent in this respect, whereas Professor Leavis in his recent diatribe on C. P. Snow's "The Two Cultures", leaves us amazed at his complete lack of subtlety, for he writes just as Dr. Johnson talked when he was "talking for victory".

As doctors we have had of necessity to pursue a long course of scientific studies, even though we may previously have spent many years in the study of classical and literary subjects, because our inclinations have seemed to run entirely in that direction. To that extent our sympathies may be said to lie with Professor Leavis rather than with C. P. Snow.

To leave a Public School in the South of England some fifty-odd years ago to attend an institution in London devoted to coaching for various Civil Service examinations, was to be struck by the different type of boy from that to which one had been accustomed. His particular culture was clearly different from one's own. It was obvious that, so far as Science was concerned, he was well advanced, whereas the public school boy had none. It was manifest, too, that he came from a different kind of home and school, not that there was anything aggressive about his attitude, but there seemed to be a different kind of outlook. He seemed to spend much of his time in the Chemistry and Physics Laboratories, and he seemed to have no trouble with Mathematics, whereas, on the other hand, the public school boy would score perhaps in three or four languages, which seemed to equalise matters where marks were concerned. If one went to Guy's some 10 years later, the same type of boy, newly out of school, was here and there again in evidence and, like the earlier boys referred to, was somehow rather remote and aloof. He gave the impression that, like the scriptural Mary, he had "chosen the better part", whereas the public school boy had no doubts in his own mind as to the cultural values of the two types of education, the emphasis here being on the word "culture".

In reading the obituary notices of doctors who have made their mark in the profession, one notes that some of them at one time had distinguished themselves in classics, and a number of doctors have given up medicine to devote themselves to literary pursuits, and have been gifted enough to make a success of it. These have usually been men who had devoted themselves to medicine purely and simply, the practice of medicine seeming to induce perhaps a more reflective type of mind than surgery. Going back to the 17th century we think, of course of Sir Thomas Browne, with his quaintly-expressed philosophy, and, in the same century we might include Burton with his *Anatomy*

of Melancholy as a good psychologist, though a priest by profession. In recent years Osler springs to mind, with his *Aequanimitas* and other literary works, not to mention his classical work on Medicine. One had occasion to read a somewhat patronising discussion of Osler by some University dons not long ago. To the young their elders are usually fuddy-duddies, but what men like Osler did was with their own unaided brains and they were not laboratory-bound like we are today. One should, of course, not forget Bright, whose account of Chronic Nephritis (without all the arithmetic, of course) we were told as students had never been bettered. What is more they could express their brilliant discoveries in lucid English prose and they did not (one imagines) write and tell the G.P. that his patient's symptoms were "suspicious" of something or the other as some physicians do today, neither did they speak of "phenomenae" and "diverticuli" as two highly-qualified surgeons have done to my knowledge. Which is all in favour of some knowledge of Greek and Latin before we ever open a medical text-book.

All the indications are, however, that the cult of science is to be intensified in the interests of the great god—"productivity". Forty more universities are to be set up in the country; so many degree-factories for embryonic scientists and producing anything but true culture no doubt. Candidates for university places have been subjected for some years to all sorts of tests except one to test their ability to write English. No one reads today, we are often told, so how can they write good English. . . .

Some politicians cry out for more money for education, and, as an election cry, it presumably has its merits. "This 'ere progress keeps moving on," said one of H. G. Wells' characters, and, as we are caught up every day in the toils of Science we can only wonder helplessly, too, where we are moving on to. Science must inevitably progress, and it is very desirable that medical science should do so, but to speak of Science as a culture seems to be a contradiction in terms. Between Science and the Humanities there is all the difference between the materialistic and the spiritual. It is about as indicative of the real thing as "Die Kultur" was during the First War, and perhaps it was really the kind of culture which Herman Goering had in mind when he said: " When I hear the word ' Culture ' I feel for my revolver."

Obiter Dictum

Dr. Hardwick, on the expectation of life :

"The Psalmist spoke of three-score years and ten, and that was in pre-antibiotic days. . . ."

REVIEWS

HANDBOOK OF OPERATIVE UROLOGICAL SURGERY:

by JOHN SWINNEY and D. P. HAMMERSLEY. Livingstone. 1963. Pp. 271. *Price* 55s.

This is a most excellent book. It fills a great need in that it is the only modern British textbook dealing with all aspects of operative urology. It is readable, succinct and beautifully illustrated, containing 266 pages of script and 259 illustrations. The latter are of two sorts, the line drawings being the best and clearest.

The book is designed for "senior students and those taking higher examinations as well as surgeons without special urological training". It is therefore rather a compromise but nevertheless achieves its aim.

The few references are up to date, but because the work is not intended to be comprehensive there could be more. For instance, the section on renal hypertension is very incomplete, certainly inadequate as it stands, and yet there are no references to further reading.

I would also criticise the absence of indications for some of the operations described. There is no way of knowing what the author's choice would be in a given situation or why. Much of the introduction, anatomy and physiology is irrelevant and in a handbook such as this could perhaps, be omitted.

It would be more valuable if there was a single section on catheters, instrumentation, cystoscopy, ureteric catheterisation and so on. These subjects are scattered through the book in an impractical manner.

Inevitably, there must be some errors in the first edition, and this book is no exception. For example, "megacolon" for "megaureter" on page 102, and Fig. 248 instead of 249 on page 257. The heading "Urinary Diversion from the Ureters" on page 105 and "Endoscopic Removal of Stones by Lithalopaxy" on page 137, are incorrect.

The chapter on the ureter is one of the best, although it would be more orderly if the headings were either all anatomical or all surgical. For example, "Congenital Anomalies of the Ureter" and "Nephro-Ureterectomy" is confusing.

Surgical practice in Britain is not stereotype, and therein lies its strength. Criticism of some of the operations in this work is therefore a matter of personal opinion based on training and environment. There is no mention of the value of operative radiology when performing partial nephrectomy, and other conservative operations for renal stone. Nephropexy for Dietls' crisis is outdated, and in severe renal trauma, investigation of contra-lateral renal function is omitted.

Mr. Swinney ignores the value of a Bigelows' or Freyer's evacuator after crushing a stone in the bladder. He would find it to be less "a prolonged procedure that can be extremely tedious". There is no clear diagram on the surgical pathology of prostatic obstruction and yet there are two identical illustrations of a coronal section of the pelvis. Vasectomy is omitted when discussing prostatectomy but mentioned later. Cold punch prostatectomy is favoured by the author, but he gives no relative advantages or disadvantages for this instrument against the more commonly used loop resectoscope. There are no illustrations of the latter or of the cystoscopes commonly used in this country. Fig. 168 shows the surgeon's finger in the rectum while carrying out retro-pubic prostatectomy. This practice would be strongly criticised by the majority of theologists.

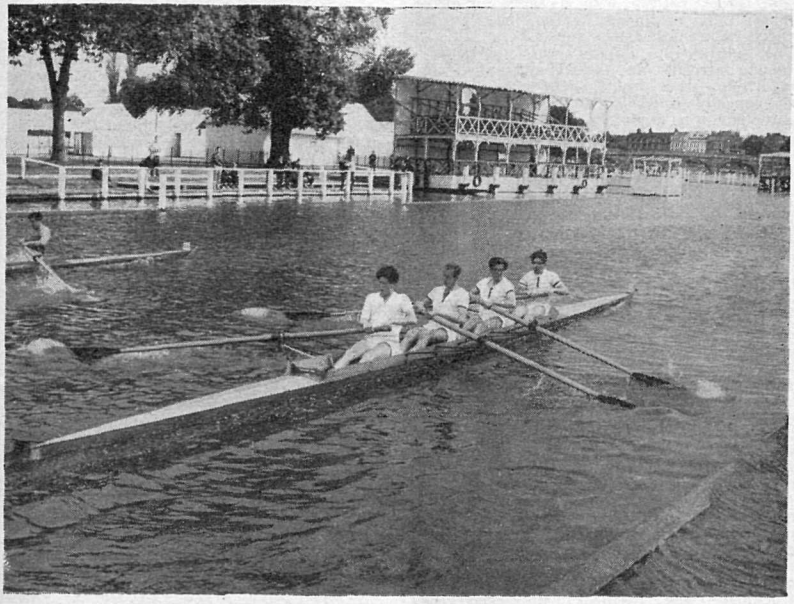
The section on rupture of the posterior urethra is too brief and in contrast, the reviewer would question the need of including anterior colporrhaphy, or the wisdom of the Millin Sling operations into this handbook. The illustration on block dissection of the inguinal nodes is not helpful.

In spite of these strictures, this beautiful book is very good indeed. It can be highly recommended as a reference book to students on the Genito-Urinary Firm and those taking their Finals, to F.R.C.S. candidates, to urological and surgical registrars and housmen ,and to general surgeons practising urology.

C. H. KINDER.

SPORT

BOAT CLUB



Guy's Four in training at Henley (report next page)

SWIMMING

The Club has had a very active and, on the whole, successful season. At the outset it appeared that the polo team would be a force in the United Hospitals competition, but unhappily the whole team faded in the vital match, and so did any dreams of success in the competition.

The U.L.U. knock-out tournament was also a case of fluctuation. In the first match against the College of Estate Management, the team played well together and survived a 1 goal handicap to win easily by two goals. In the next round, against Imperial College a week later, it did not appear that the same team was in the water and I.C. disposed of the team's hopes.

Taken overall, the results were gratifying during the summer: Played 13, Won 8, Drawn 1, Lost 4. As the opposition improved, so the team appeared to play better together and as long as the pressure was on, there was no lack of effort and skill. But as with Hospital performances in so many sports, in an easy match, where the team's superior swimming strength should have seen them home and dry, they tended to play individually with the result that these matches were lost.

CRICKET

SUSSEX TOUR—1963.

Played 5; won 2; drawn 1; lost 1; aband. 1.

Basingstoke, 130 (C. Davoodbuoy, 6 for 45; M. Walter, 3 for 36).
Guy's, 96 (J. Norman, 30).

Littlehampton, 136 for 8 dec. (D. Biggs, 3 for 16).
Guy's, 134 for 8 (D. Biggs, 38).

Fenning, 225 for 2 dec.
Guy's, 226 for 6 (A. Edgar, 69; N. Healey, 42 not out; H. MacGregor, 41).

Guy's, 194 (G. Hambleton, 70 not out).
Cuckfield, 85 (M. Walter, 4 for 23; I. Reekie, 3 for 10).

"Had only now and then lucid intervals."
(Don Quixote).

Fortunately these coincided roughly with the five matches played. The match at Basingstoke was disastrous, only the bowling of Walters and Davoodbuoy, plus Norman's hurricane innings deserving mention. An elderly gentleman completely bamboozled the middle order batting with a series of prodigious "donkey drops", the last seven wickets falling for thirty runs.

The journey to Bognor was uneventful, although arrivals at the Thatchings were spread over three hours, depending on the car's capacity—and also that of its crew.

Littlehampton presented as a typical English seaside resort—wet. The cricket, too, was really rather dull, even the Hospital's "experimental" bowlers being treated with unseemly respect Biggs, having been enticed away from his Land Rover with some difficulty, took three good wickets and scored a dashing thirty-eight. Healey and Reekie entertained three bemused old men (the crowd) by some erratic stroke play intermingled with astounding feats of sprinting; indeed Healey managed to lap Reekie twice after one shot, much to the latters consternation. The three runs needed to win from the last ball were not forthcoming, and so a "good" draw was the result.

Rain spoiled the game at Bognor, but not the evening's entertainment. This club must surely boast one of the most "friendly" groups of supporters in the South of England, no one seemed unwilling to join in the fun.

Fenning, as usual, produced a series of errors in the fielding and bowling, only the portly Baker behind the stumps acquitted himself well. The batting was good, inspired no doubt by Pagliero's spirited opening stand with MacGregor. Edgar, ably supported by Healey, struck the ball prodigously and they scored a hundred runs in fifty-five minutes.

Cuckfield was reached with even the staunchest members of the party slightly weary. The batting order was reversed, and it looked like it. Hambleton, a competent number nine, hit thirteen boundaries in an undefeated seventy. Knott and Walter both had the greatest difficulty in bowling gentle medium pace, the latter managed a good eighth over in which he took three wickets. Reekie, varying something, removed the last three batsmen, thus giving Guy's a one hundred and nine run victory.

A tour enjoyed by everyone, but unfortunately bereft of the younger members of the Club. Perhaps the many anecdotes associated with the players' activities will serve to whet their appetites for next year.

ROBERT MYALL.

BOAT CLUB

HENLEY ROYAL REGATTA, 1963

Henley Royal Regatta was established in 1839. There is evidence that Guy's had an active Boat Club one year later. On July 3rd, 1963, a Guy's crew raced at Henley for only the fourth time in the Club's 123 years history.

Preparation for the regatta began as early as September, 1962, when, under the direction of coaches D. Gurney and T. Peet, the possible members of the crew began the many sessions of rowing, circuit training, and road running that were necessary to reach peak fitness. Eventually the summer regattas were upon us, and the final four was arrived at, a decision of considerable difficulty as this year the club was fortunate in having several competent, enthusiastic oarsmen. To gain racing experience, the four entered several up-river regattas. Twelve days before Henley Regatta was to begin, we travelled down to Wargrave, near Henley, where N. Watson had arranged most comfortable accommodation for our final training.

On the very first morning of our stay, Venning developed a rash, which the prospective doctors amongst us diagnosed as German measles, and, after qualified confirmation, he went home for three days. The Club's first reserve, M. Preece, hurried down to Wargrave that same evening and gave most valuable assistance during this time.

Our daily programme consisted of breakfast at 8.30 a.m., followed by a short rest, an outing on the river, lunch at "The Angel" by Henley bridge, a leisurely afternoon, a light tea, a second outing (and sometimes a third), a large supper and finally an ale at a local hostelry. We trained hard, and by the end of one week were quite exhausted, mainly from our coach's fanatical enthusiasm for making other people work hard. We were fortunate on one or two occasions to have valuable coaching from Mr A. S. F. Butcher, probably one of the finest Guy's oarsmen ever, and from Dr. H. Freeman, who encouraged us in our efforts

We had entered for the Visitors' Challenge Cup for college fours. It was a bitter blow and disappointment to hear that we had been drawn against Christ's College, Cambridge, whom we had watched at Marlow Regatta and whom we thought to be one of the strongest fours in the event. A glance at the programme strengthened our fears when we read that the Christ's crew outweighed us by one stone per man and contained two Cambridge Goldie oarsmen.

In shimmering white kit we launched our boat and paddled slowly down the course trying to relax and determined to give a good account of ourselves. Eventually we were at the start with the umpire raising his hand and giving us instructions.. "Are you ready? Go!" We were off. We started rather slowly but settled down well, rowing with considerable rhythm, thanks to some excellent stroking by Chris Hawes and some competent steering by Peter Venning. We worked hard, but Christ's used their extra strength to slowly draw away from us, winning by some 4-5 lengths. We were, of course, very disappointed, but, although well beaten, we had pressed hard to the finish and given of our best. Christ's time was 8 minutes 4 secs., we being some 15 seconds slower.

It was a considerable consolation to learn later that Christ's put up the fastest time of the day, being 12 seconds faster than any other crew in our event; this emphasised our bad luck with the draw It was even more of a comfort when Christ's went on to win the entire event. We felt that these facts justified our entry and should give encouragement to the Boat Club when contemplating future entries to the regatta.

DAVID COOPER.
TIM PEET.

Henley Crew.

Bow	P. D. Venning	..	12st. 0lbs.
2	N. A. Watson	..	11st. 10lbs.
3	D. K. C. Cooper	..	13st. 1lbs.
Stroke	C. D. Hawes	..	12st. 2lbs.

Average weight — 12st. 3lbs.

1st Reserve: M. A. Preece.

Chief Coaches: T. N. D. Peet and D. J. F. Gurney.

HOSPITAL INFORMATION

APPOINTMENTS VACANT

GUY'S HOSPITAL

Applications are invited for the post of **Registrar in the E.N.T. Department,** from 1st October, 1963, with appointment for one year in the first instance. Forms of application are obtainable from and should be lodged with the Superintendent, Guy's Hospital, S.E.1., not later than 30th August, 1963.

GUY'S HOSPITAL, S.E.1.

Resident Anaesthetist (House Officer grade post registration) required September 1st, 1963. Apply immediately, giving names of two referees, to the Superintendent.

GUY'S HOSPITAL, S.E.1.

Applications are invited for the post of **Registrar in Diagnostic Radiology** with duties to commence on 1st October, 1963. Appointment in the first instance until 30th September, 1964. Candidates for the next D.M.R.D. examination will be considered. Forms of application are obtainable from, and should be lodged with, the Superintendent, Guy's Hospital, S.E.1., not later than **31st August, 1963.**

EVELINA CHILDREN'S HOSPITAL OF GUY'S HOSPITAL

Applications are invited for the post of **Resident Paediatric House Officer** (with casualty duties) for six months from 1st October, 1963. The appointment is recognised for the D.C.H. and consists of four months medicine and two months surgery. Candidates must be registered practitioners and should apply giving age, nationality, qualifications (with dates), and copies of three recent testimonials, to the Hospital Secretary by first post on **Monday, 2nd September, 1963**

GUY'S HOSPITAL MEDICAL SCHOOL

Applications are invited for the post of **Junior Lecturer/Lecturer in the Department of Medicine,** from a date to be arranged as soon as possible after 1st October, 1963. Salary in the range £1,150 to £1,350/£1,450 to £2,150 (subject to review) according to qualifications and experience, with superannuation and family allowance. Applications should be lodged on a form obtainable from the Dean not later than **9th September, 1963.**

GUY'S HOSPITAL MEDICAL SCHOOL

Applications are invited for the post of **Junior Lecturer/Lecturer in the Department of Morbid Anatomy and Histology** from a date to be arranged as soon as possible after 1st October, 1963. Salary in the range £1,150 to £1,350/£1,450 to £2,150 (subject to review) according to qualifications and experience, with superannuation and family allowance.

Applications should be lodged on a form obtainable from the Dean not later than **9th September, 1963.**

GUY'S HOSPITAL DENTAL SCHOOL

Applications are invited for the appointment of **Senior Lecturer/Lecturer in the Department of Conservative Dental Surgery,** with attendance on 6 sessions per week. Appointment to commence as soon as possible.

Salary scales:

Senior Lecturer	£2,000 x £100 to £2,400 (bar). £2,500 x £100 to £2,700
Lecturer	£1,450 x £100 to £2,150 x £50 to £2,200

both with superannuation and family allowance.

Applications should be made on a form, obtainable from the Dean, Guy's Hospital Dental School, London Bridge, London S.E.1., not later than **Saturday, 31st August, 1963.**

HOUSE APPOINTMENTS

Assistant House Surgeons

To:

Mr. Lawrie — Mr. C. Chantler
Appointed for 6 months, the first 3 as A.H.S.

Mr. Glover — Mr. A. S. Russell
Appointed for 6 months, the first 3 as A.H.S.

Mr. Brain — Mr. C. N. Garstang
Appointed for 6 months, the first 3 as A.H.S.

Mr. Beard — Miss A. Y. Coxon
3 *months*

Assistant House Physicians

To:

Dr. Baker and Dr. Houston — Mr. A. Thomas
Appointed for 6 months, the first 3 as A.H.P.

Dr. Kauntze, Dr. Joiner and Professor Butterfield — Mr. A. D. Milner
Appointed for 6 months, the first 3 as A.H.P.

Dr. Mann, Dr. Scott and Professor Butterfield — Mr. J. B. M. Shepherd
Appointed for 6 months, the first 3 as A.H.P.

Dr. Hardwick, Dr. MacLean, Dr. Bishop and Dr. Deuchar — Mr. R. I. Kennedy
Appointed for 6 months, the first 3 as A.H.P.

Casualty Officers

Mr. F. D. H. Birkett
Mr. M. E. Conybeare
Mr. W. D. A. Foster
Mrs. J. C. Gardner
Mr. E. H. Harley
Mr. P. C. H. Newbold
— 3 *months*

House Surgeons

To:

Mr. Eckhoff — Mr. B. J. Main
3 *months*

Professor Atkins — Mr. J. A. Child
6 *months*

Mr. Wass — Mr. N. J. Barwell
3 *months*

Mr. Blackburn — Mr. J. A. Clarke
6 *months*

House Physicians

To:

Dr. Baker and Dr. Houston — Mr. J. E. C. Hern
6 *months*

Dr. Kauntze,
Dr. Joiner and
Professor Butterfield } Mr. C. J. Roberts
6 *months*

Dr. Mann,
Dr. Scott and
Professor Butterfield } Mr. J. A. S. Carruth
3 *months*

Dr. Hardwick,
Dr. MacLean,
Dr. Bishop and
Dr. Deuchar } Mr N. M. Cohen
3 *months*

Resident Obstetricians

1. 5.63—31.10.63	Mr. M. D. Steyn
1. 7.63—31.12.63	Mr. J. D. F. Bellamy
1. 9.63—29. 2.64	Mr. J. V. Harvey Kemble
1.11.63—30. 4.64	Mr. D. R. Rees

Throat and Ear House Surgeons

Mr. A. G. Cumberland	3 *months*
Mr. M. V. Smith	6 *months*

Orthopaedic House Surgeons

Mr. C. D. Binnie	3 *months*
Mr. D. R. Wilson	3 *months*

Dermatological House Physician

1. 5.63—31.10.63	Mr. P. Husband
1.11.63—30. 4.64	Mr. D. Denis-Smith

Neurological House Physician

Mr. M. D. O'Brien — 6 *months*

Genito-Urinary House Surgeon

Mr. W. G. Hartfall — 3 *months*

House Surgeons to the Thoracic Unit

Mr. E. E. Cockayne	3 *months*
Mr. T. A. H. English (S.H.O.)	3 *months*

Children's House Physicians

Mr. A. N. Nicolaides	3 *months*
Mr. C. F. P. Wharton	6 *months*

House Physician to Dr. Bishop and Professor Butterfield and Dr. Wayte and Mr. McArthur

Mr. B. M. J. Wolfe — 6 *months*

House Physician in the Department of Experimental Medicine

Mr. B. S. Worthington — 3 *months*

House Physicians in Clinical Pathology

Miss R. R. Millis (S.H.O.)	3 *months*
Mr. M. Pazirandeh (S.H.O.)	3 *months*

R.M.O.s in Nuffield House

1.6.63—30.11.63	Mr G. R. Peachey
1.7.63—31.12.63	Mr. J. A. Wall

House Physicians in the Department of Psychological Medicine

1. 4.63—30.9.63	Mr. D. H. Myers
1. 4.63—30.9.63	Mr. W. E. M. Pryse-Phillips
1.10.63—31.3.64	Readvertised
1.10.63—31.3.64	Readvertised

Resident Anaesthetists

1.6.63—30.11.63	Miss P. H. Curry (S.H.O.)
1.6.63—30.11.63	
1.9.63—29. 2.64	Miss A. Tattersall (S.H.O.)
1.9.63—29. 2.64	Mr. J. C. Simpson

BECKENHAM HOSPITAL

Casualty Officer (S.H.O.):
Readvertised

LEWISHAM HOSPITAL

House Surgeon to Mr. Cavendish:
(From 27.9.63)
Mr. W. S. Foong
House Physician to Dr. Llewellyn Smith:
(From 16.9.63)
Mr. G. D. Nicholson

ORPINGTON HOSPITAL

House Surgeon General Duties with Orthopaedics):
Readvertised
House Surgeon (General Duties with E.N.T.):
Mr. J. R. Bernard
House Surgeon (General Duties with Physical Medicine):
Readvertised

QUEEN MARY'S HOSPITAL, SIDCUP

House Surgeon:
Readvertised

ST. JOHN'S HOSPITAL, LEWISHAM

Casualty Officer and Orthopaedic House Surgeon:
(from 25.9.63)
Readvertised

J. B. BLAIKLEY
Superintendent

PASS LIST

ROYAL COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS
M.R.C.O.G.

July, 1963.

M. F. Wabuso

UNIVERSITY OF LONDON

Third (B.D.S.) Examination in Dental Surgery, June, 1963

Pass

C. D. Boxall	J. V. Maddison
E. J. N. Chater	L. R. M. O. Marten
K. A. Crawford	J. Page
Margaret N. Evans	Marian E. Phillips
S. C. R. Evans	A. J. Pickles
P. D. Gedge	Judy M. Pritchard
R. M. N. Hooker	R. H. Sainsbury
R. P. Jenkin	M. R. Trevelyan
D. R. A. Lloyd-Edwards	J. T. Weedy Janet P. Whittam

Part I

A. J. Atkins	F. N. Farnworth
D. M. Balean	Anne M. Gaskell
Elizabeth S. Belcher	B. K. M. Harborth
E. W. Blackwell	A. Hirst
J. M. Crawford	J. V. Holland
J. Cutler	R. D. Johnson
Cleone S. Davis	J. Kay
G. K. Dubock	R. E. King
C. Durant	P. V. Lawrence
D. A. Edgar	S. Parry
J. A. Edgar	D. S. Pepper
D. C. E. Loader	J. B. Peter
P. D. Mace	M. J. C. Purnell
K. J. McGlynn	Elizabeth G. Reid
N. E. Malyon	P. A. Sims
P. A. Mitchell	C. J. Sprawson
Dianne B. Morgan	T. J. Storrs

A. D. C. Munro
R. F. A. Murdoch
T. W. Negus
S. L. R. Oakenfull
H. W. D. O'Connor
R. Torrance
J. M. A. Wilton
Delia L. Winder
A. Winskill
P. J. Wren

Part II

M. J. Burke
R. G. D. M. Burr
P. J. Griffiths
J. A. LeSage
I. McCormick
N. E. Maylon
J. D. Moran
M. D. Murray
R. W. T. Myall
J. H. M. Phillips
Margaret E. Protheroe
R. G. Shepherd
C. D. C. Tomlins
Ruth I. Williams

Second (B.D.S.) Examination in Dental Surgery, July, 1963

D. F. Abbatt
Anne S. Baker
J. D. W. Burnard
B. M. Bishop
R. A. Burroughes
B. C. Church
R. A. Cramp
R. G. Daniel
R. A. Darracott
W. P. Dean
K. R. Eve
E. A. Flower
N. H. Flower
R. E. Gabbe
Linda F. Greenwood
D. G. M. Greig
Jacqueline Hawley
D. M. Higgs
C. C. Hine
Janet M. Hock
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NURSING NEWS

Entered:

Sister B. Barker to Matron's Office..
Sister D. Henderson to School of Nursing.
Sister J. Monro to School of Nursing.
Staff Nurse B. Anelay to Theatres.
Staff Nurse A. Ashplant to Astley Cooper.
Staff Nurse J. Crisp to Luke.
Staff Nurse W. Smith to Evelina Hospital.

Left:

Staff Midwife J. Dean.
Staff Nurse M. Hughes.
Staff Nurse W. Grannum.

PAPERS BY GUY'S MEN

Blackwell, B. Acute leukaemia presenting as a lump in the breast. *Brit. J. Surg.* 1963, **50,** 769.

Calne, R. Y. and others. Effect of cooling on the functional survival of canine kidneys removed, stored and transplanted to their original donors. *Brit. J. Surg.* 1963, **50,** 769.

Emslie, R. D. Cancrum oris. *Dent. Practit.* 1963, **13,** 481.

Kellaway, T. D. Completely healed dissection of the aorta with death from phlegmonous colitis. *Brit. Heart J.* 1963, **25,** 532.

Landon, D. N. and Williams, P. L. Ultrastructure of the node of Ranvier. *Nature* 1963, **199,** 575.

Levin, B. and others. Reversible salt wasting syndrome of the newborn and infant. *Arch. Dis. Childh.* 1963, **38,** 513.

White, R. H. R. Clinicopathological study of acute glomerulo-tubular nephritis in East African children. *Arch. Dis. Childh.* 1963, **38,** 420.

Wheatley, David. Hypertension: Management and results, discussion. *Proc. R. Soc. Med.* 1963, **56,** 400.

Wheatley, David. The General Practitioner Research Group. *Clin. Pharmacol. Ther.* 1963, **4,** 542.

PERSONAL

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Dr. D. P. Winstanley, 48, Overton Drive, E.11. Tel: WANstead 0021.

Dr. I. Zayid, 61, Southfield Road, High Wycombe, Bucks

BIRTHS

DOBSON.—To Kate and Bill Dobson, a son, Guy Lewis, on 19th May, 1963, at Nuffield House, a brother for Nicholas.

JOHNS.—To Pamela and Richard Johns, a daughter, Lucy on August 2nd. at Farnborough, Kent, a sister for Susan, Katharine and Nicholas.

TREDRE.—To Angela and Alec Tredre, M.B., B.S., a son, Stephen Ralph, on July 17th, 1963, a brother for Roger.

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GUY'S HOSPITAL GAZETTE

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Editors *W. G. Reeves*
I. A. Baker

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Guy's Hospital, London

PASSIM

It is with great regret that we record the death of Viscount Nuffield, *G.B.E.*, *C.H.*, on August 22nd. Lord Nuffield was associated with Guy's for some 30 years serving successively as Governor, Treasurer and Honorary President of the Hospital. He gave most liberally to Guy's, and in particular his generosity made it possible for the complete rebuilding of the Hospital to be considered.

An obituary will appear in our next issue.

The Patient's View

In keeping with the British system of justice, patients are healthy until proved otherwise. But the criteria by which they are judged are usually kept an intricate secret between the various medical attendants into whose charge they fall. This may be justifiable in a purely medical assessment, but all too often this bleak approach is extended to cover those more individual problems not infrequently concealed by bewilderment, or a desire not to appear difficult.

At one time it was more by good fortune that an individual received medical care, but now when a more altruistic approach is favoured, medical aid is available to all. Yet upon entering the great hospital machine the patient is often placed within a foreign and confusing environment totally at variance with his habitual experience.

Any lack of consideration for the less obvious problems which may besiege the patient, is often mentally excused by those in authority in view of the perpetual staff shortage and the priority of other vital duties. Further, the fact that a sick person is being correctly investigated and treated may assuage any other obligations which may momentarily arise in the minds of his invariably busy attendants at hand. But such an approach does not explore the many very real anxieties to which patients may be subject, through their importunity or ignorance.

These may be generated by many causes, for example, a basic fear of hospitals and disease, often created through ignorance or misunderstanding; the unusual atmosphere of a hospital ward with the close proximity of other patients of diverse types and in various degrees of sickness, and the difficulty of adapting to the rigorous ward-routine; as well as problems he may bring with him stemming from his family and business.

A Report on *Communication between Doctors, Nurses and Patients* recently prepared by the Ministry of Health, has endeav-

oured to analyse the significance of these problems. Among their recommendations are two of particular interest. They suggest that every in-patient should have a *personal* doctor who will not only be intimately involved with the patient, but also act as a link between the many other people and departments with which the patient may come into contact, and who will inform him of their identity and function. This is an extrapolation of the situation prevalent in general practice and aimed at in many hospitals, but there is often a lack of correlation on the patient's behalf. In addition, to offset any inconsistency of communication with the patient, they suggest that ward conferences of medical and nursing staff already practised in many hospitals would be an asset.

Teaching hospitals, almost by definition, occupy an anomalous position. Here, interest in the patient's more personal problems is actively encouraged, but within this more complex arrangement, further problems arise. As part of the recent evaluation of New Guy's House, a questionnaire was sent to many patients who have been treated there, with particular reference to the open ward system controversially maintained at Guy's. Most of the replies applauded the present arrangements, but one comment throws light on a possible source of confusion to the patient:

> " *Yes, I liked the open ward, it is very friendly, but there is one drawback, you see and learn too much, and it is liable to scare the living daylights out of you*".

The frequency of such a reaction will obviously depend on the exact method of teaching adopted, and while there is no substitute for bedside teaching, it may be conducted with a minimum of concern to the patient.

However, a conscientious ward-clerk may achieve a great deal by acting in this "personal" role. For however scientific the approach or elegant the diagnostic machinery employed, it is of paramount importance to ascertain the more individual and subjective problems of a patient and their importance to him. This may justifiably be included within what is often called " The Art of Medicine".

Plea for Pathology

The pre-clinical months of the London medical degree involve to a large extent an intensive assessment of numerous facts relating to topographical anatomy, the classical development and understanding of physiology and the basic elements of physical and organic chemistry, which are applied to a small degree to a course of biochemistry. These studies facilitate for and result in a dogged and prolonged swot with little stimulus to the intellect or curiosity of students. A fortunate few are given the opportunity to undertake an extended nine-month course in anatomy or physiology for a Bachelor of Science degree. These courses allow a wide field of reading, intercollegiate meetings, a tutorial system and the close and detailed study of selected subjects as well as a good deal of

practical work. Students completing this course attain a stage where they would be able to undertake a line of investigation themselves.

Much of that which has been written in criticism of the preclinical courses can be directed towards the study of pathology. This course depends on a series of lectures, demonstrations and instruction at autopsy. The subject presents to and is accepted by the majority of students again as an accumulation of facts to be learned for examination purposes. For those who have a more enquiring mind and a bias towards this particular field, there is a four-year wait before any more intimate association with the subject can be entertained. Professor Payling Wright in his valedictory address, spoke of the frustration of such individuals, and expressed the hope that a B.Sc. course in pathology be created by the University.

Such a course could follow, as do those in anatomy and physiology, the introductory lectures in pathology and bacteriology. It would allow an insight into the working of an academic pathology department. Knowledge gained by the mode of investigation would allow students to undertake experimentation of their own, and autopsies might be carried out under supervision. Knowledge would also be gained from working in connection with pathologist, whom, Professor Payling Wright indicated, would be only too ready to guide and instruct. The Professor also confirmed the adequacy of laboratory facilities. Those completing such a course would have been given a taste of an academic career, which is at the moment diluted by the aura of clinical medicine. Potential graduates, who do not return to the laboratory on qualifying, would effect a much needed closer association between clinician and pathologist.

Graduates of Oxford and Cambridge in their respective four and three-year preclinical courses have the advantage of being able to undertake such studies. It is to be hoped that the Senate of London University will see fit to enrich their degree by establishing the required opportunities.

GUY'S DIARY

SEPTEMBER

EXHIBITION.		*Goitre.*	
14th	S.	10.00	Departmental Round by Mr. G. WESTBURY. Clinical Theatre.
19th	Th.	1.00	*Neurosurgical Round* by Mr. Murray FALCONER. Clinical Theatre.
27th	F.	1.00	Mr. B. K. RANK, Sims Travelling Professor of the Royal College of Surgeons. Clinical Lecture. *The Early Diagnosis of Melanomata in Relation to Treatment.*
28th	S.	10.00	Clinico-Pathological Meeting. Clinical Theatre.

THE SURGERY OF AORTIC STENOSIS

by Mr. D. N. ROSS

A Clinical Lecture delivered on 4th March, 1963.

By aortic stenosis we mean an obstruction to the outflow of blood from the left ventricle and although this commonly lies at the valve level, it may be proximal to this or even distal. The stenosis may, therefore, be valvar, sub-valvar or supra-valvar and the first two may be further sub-divided on the basis of their pathological anatomy.

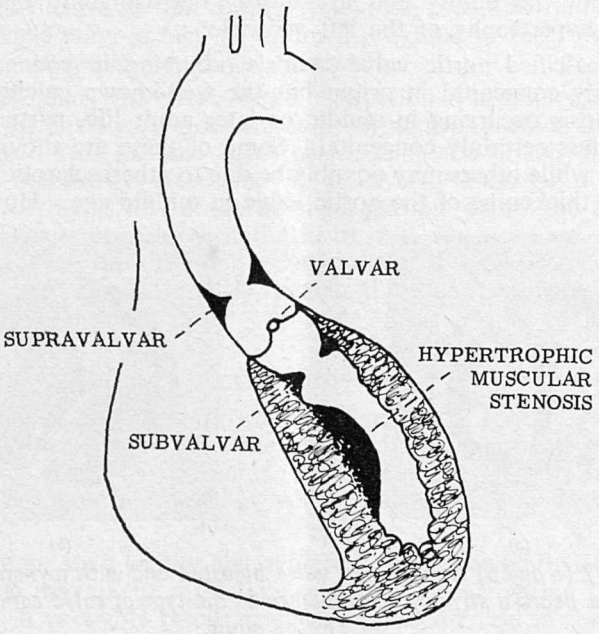


Figure 1 - Illustrating in diagrammatic form the possible levels of the obstruction in aortic stenosis.

In other words the valvar stenosis may be either calcified or non-calcified and this is an important distinction from the point of view of treatment, while the sub-valvar stenosis may be localised or diffuse. Again this has a bearing on treatment.

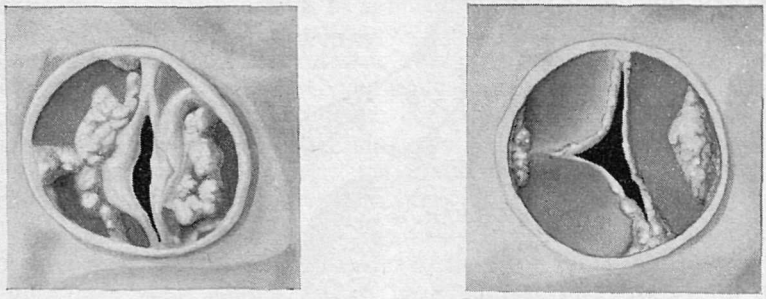
Aetiology of Aortic Stenosis

The supra-valvar and localised sub-valvar obstructions are the least controversial as they are clearly congenital in origin. Supra-valvar stenosis occurs at the point of attachment of the valve commissures to the inner wall of the aorta and the obstruction is in the nature of a coarctation of the aorta at this site. Localised sub-

valvar obstruction is due to an embryological defect of fusion of the bulbus cordis with the ventricle. An analagous situation arises on the right side of the heart and gives rise to the localised form of pulmonary infundibular stenosis.

The aetiology of *diffuse* sub-valvar stenosis is still under discussion. It can be caused, as on the right side, by generalised muscular hypertrophy as a result of obstruction at the valve or it may follow hypertrophy of the left ventricle from any cause, e.g., essential hypertension. Asymmetry of the ventricular septum as in rhabdomyoma may be a cause of diffuse muscular sub-valvar stenosis and there is, in addition, a well-defined group of cases with a strong familial background. Sudden death occurs in early adult life in members of the family and at autopsy one can only find diffuse muscular hypertrophy of the left ventricle.

Non-calcified aortic valve stenosis occurring in young children is obviously congenital in origin but the well-known calcified aortic valve stenosis occurring in middle or later adult life, particularly in males, is less certainly congenital. Some of these are thought to be rheumatic while others may possibly be due to atherosclerotic development and thickening of the aortic valve in middle age. However, as



(a) (b)

Figure 2 (a and b) A congenital valve bicuspid and with myxomatous nodules bears a striking resemblance to the type of valve commonly seen in the adult.

a result of seeing a number of these cases at open heart surgery it is impossible not to be struck by the similarity between these valves which are often bicuspid in nature and the congenitally stenosed valve found in the non-calcified younger age group. It seems likely, therefore, that the adult type of calcific aortic stenosis represents later calcification in a congenitally abnormal aortic valve. In early life the stenosis is symptomless but with calcific deposition the valve becomes rigid and gives rise to an obstruction in later life.

The Effects of Obstruction on the Left Ventricle

This results in a work hypertrophy and a pressure rise within the cavity of the left ventricle. The left ventricle undergoes an enormous concentric muscular hypertrophy and the pressure within its lumen may rise to 200 or 300 mm. Hg. in order to maintain a normal systemic blood pressure in the region of 100–120 mm. Hg.

As a result of this muscular hypertrophy the ventricle requires an increased coronary blood supply and indeed may outstrip the available blood supply with the production of ischaemic pain. Long continued ischaemia will result in intra-myocardial fibrous replacement of the muscle and this can often be seen in cross-section of the ventricle at autopsy.

A further effect of this gross muscular hypertrophy is to cause a *"muscle-bound"* effect on the left ventricle. The muscular thickening reduces the effective lumen of the ventricle and reduces the amount of blood which it can accommodate during diastole. Consequently, the amount of blood ejected in systole will be correspondingly reduced. A further possibility is that the hypertrophied muscle will itself act as an obstruction so that during systole the muscular outflow part of the ventricle may, in fact, close down proximal to the valve—a form of diffuse muscular sub-valvar obstruction.

In summary the effect of the obstruction is an increased *pressure* load on the heart with gross muscular hypertrophy which is concentric in nature. This has the effect of reducing the lumen of the heart without necessarily increasing its transverse diameter. This is in contrast to the effects of aortic regurgitation where the effect is to increase the *volume* load of the heart with an increased size of the cavity of the ventricle to accommodate the diastolic reflux and consequently an enormously increased transverse diameter of the heart.

Clinical Features in Aortic Stenosis

All symptoms in aortic stenosis represent a severe encroachment on the cardiac reserve since the initial work hypertrophy of the heart is unaccompanied by symptoms. The classical symptoms are syncope, angina and breathlessness of which the latter is by far the most ominous.

Syncope may be the first symptom to draw attention to the condition and may at the same time represent a heart with a fair cardiac reserve. It probably results from reflex vasodilation in the periphery arising from pressor receptors possibly within the cavity of the left ventricle. A common finding is for the patient to present with syncope as the first feature while cranking his car, running for a bus or undertaking some form of unusual exertion. Syncope arising late in the disease can be an ominous symptom if it results from heart block or ventricular standstill.

Angina may be present for some years in aortic stenosis and represents a relative ischaemia of the hypertrophied muscle. This may be due to the hypertrophy of the muscle outstripping the available normal coronary blood supply, but where there is in addition, coronary atherosclerosis, the angina will be more severe.

Breathlessness, particularly where it is accompanied by orthopnoea, represents left ventricular failure and an impending exhaustion of the cardiac reserve. It is an ominous symptom and when present demands urgent treatment.

Physical Findings

The pulse in aortic stenosis is of small volume and has a characteristic slow rise and sustained quality. It is difficult to appreciate this pulse accurately on clinical examination but a recording of the pulse tracing can be taken quite easily by indirect methods or by means of an indwelling needle in say, the radial artery. Useful information can be derived from this tracing and it is possible to measure the rate of rise of the pulse. From the practical point of view the important thing to notice is the small volume of the pulse in relation to the powerful work being done by the left ventricle.

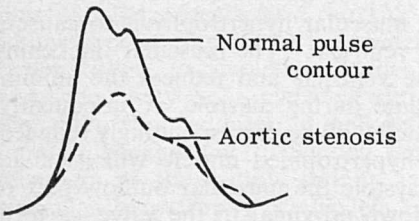


Figure 3 - The anacrotic pulse compared with the normal pulse contour.

The left ventricular impulse is usually easy to feel. It is not displaced laterally since the heart in pure aortic stenosis is not usually enlarged. The impulse, however, has a heaving and sustained character unlike the hyperdynamic type of impulse in a free aortic regurgitation. During palpation of the praecordium a systolic thrill is generally easily palpable over the aortic area and conducted into the neck. The thrill is more easily felt on expiration and with the patient sitting up. The characteristic murmur is of an ejection type, i.e., it projects a diamond shaped configuration on the phonocardiograph (see next page). It is common for the aortic second sound to be "absent", particularly in calcific aortic stenosis since the "closure" of the valve cannot produce a closing sound. There is commonly a diastolic murmur immediately following the timing of the second sound, but this does not necessarily mean haemodynamically significant aortic regurgitation. Any rigid narrow orifice will naturally not be able to close in diastole and will therefore give rise to a diastolic murmur. One is never justified in making a diagnosis of aortic regurgitation on the presence of a diastolic murmur only.

Special Investigations

The electrocardiograph can be useful in assessing the severity of aortic stenosis. It is usual to find considerable left ventricular hypertrophy with deep S waves over the praecordial leads 1, 2 and 3 and big R waves over the left ventricular leads V4, 5 and 6. Features of more serious significance are a depression of the T waves in V4, 5 and 6, particularly if this is associated with depression of the ST segment. All these electrocardiographic changes again represent severe myocardial damage and are not necessarily reversible. Even a reversion of the electrocardiogram to near normal does not necessarily represent a normal myocardium. In cases of pulmonary valve stenosis which have been followed up for many years post-operatively a disappearance of the right ventricular strain pattern does not necessarily mean a normal myocardium. Many of these cases at cardiac catheterisation are found to be unable to respond to an

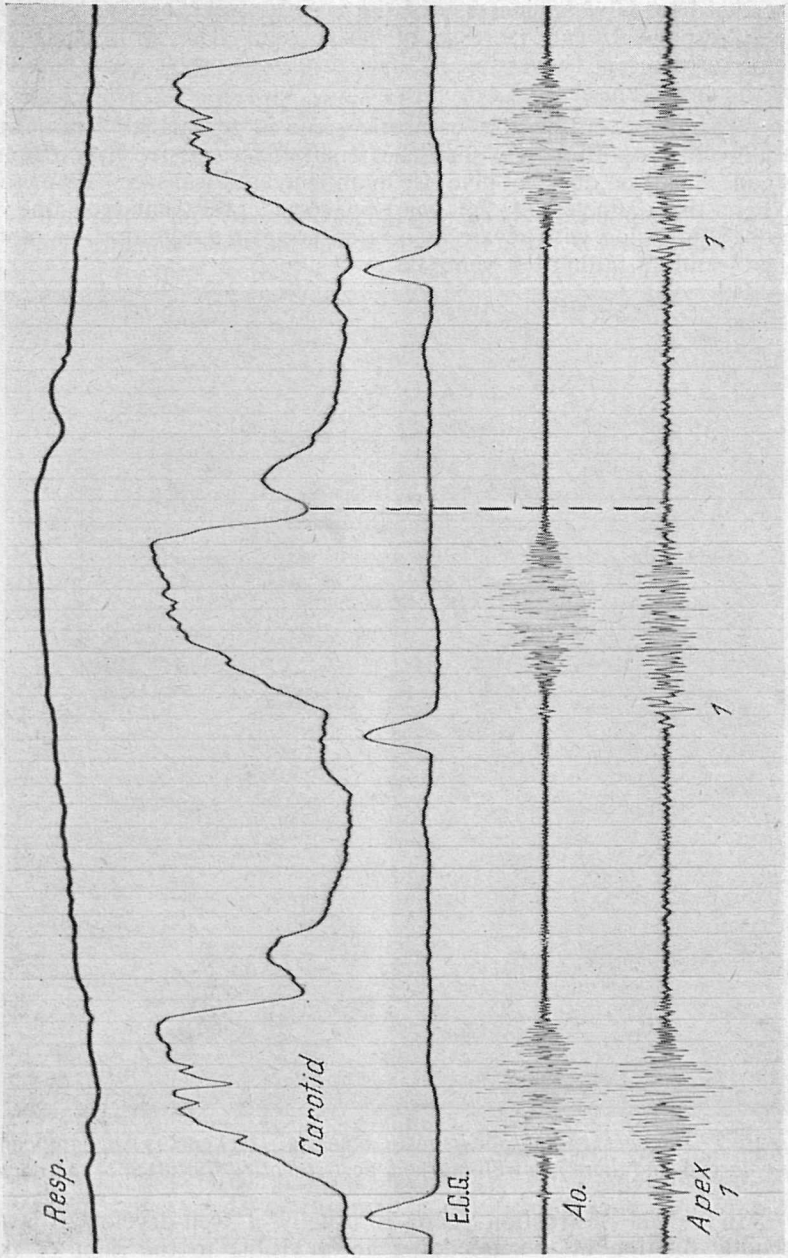


Figure 4 - A phonocardiogram from aortic stenosis. The dotted line indicates the time of aortic valve closure.

increased load by an increase of the heart's stroke output. Instead they respond by an increase of heart rate. This is thought by some to represent irreversible changes or fibrous replacement of some of the heart muscle.

The chest radiograph in aortic stenosis reveals a dense but usually disproportionately small heart since the massive hypertrophy is concentric and does not give rise to an increased transverse diameter. Where the diameter of the heart is considerably enlarged one is probably dealing with severe associated aortic regurgitation, or more significantly a failing left ventricle.

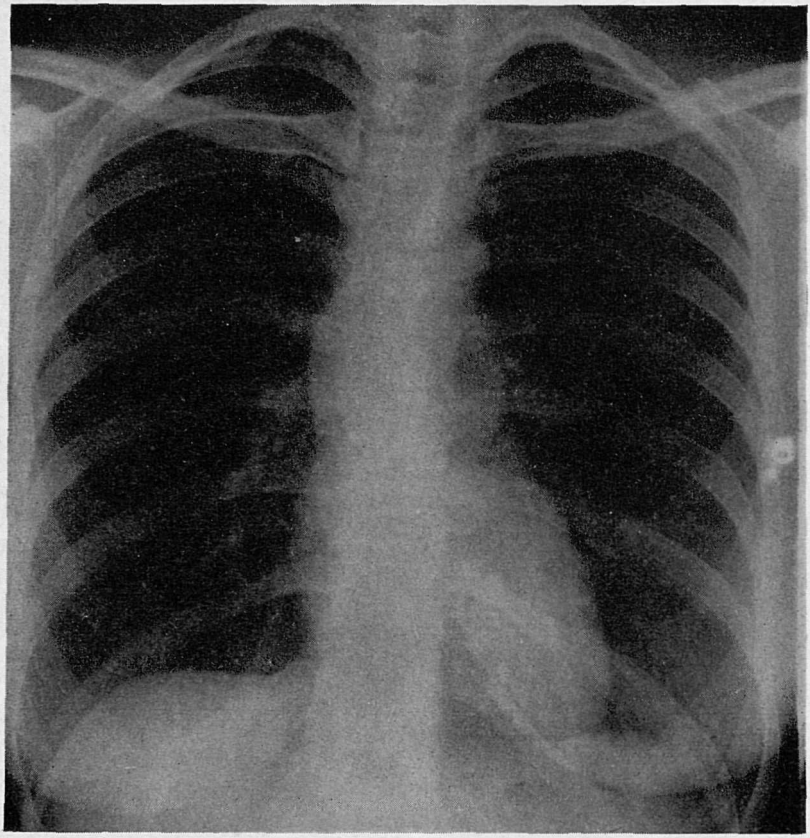


Figure 5 - The chest radiograph in aortic stenosis. The heart is not significantly enlarged and there is a well marked post-stenotic dilatation of the aorta.

In valvar obstruction there is usually a well-developed post-stenotic dilation of the ascending aorta visible to the right of the vertebral column. Conversely, where this is absent it may suggest a condition of sub-valvar stenosis. In adults with isolated aortic stenosis at valve level the valve is invariably calcified. Valve calcification is best seen in a penetrating lateral view of the heart shadow. If calcification is absent in an adult with presumed aortic valve stenosis

it is likely that the diagnosis is incorrect or that the obstruction is at a sub-valvar level.

Left ventricular angiography and retrograde aortography have, on the whole, been disappointing in the demonstration and diagnosis of aortic valve stenosis. They can, however, be useful and indeed diagnostic in demonstrating the muscular type of diffuse sub-valvar obstruction.

Left heart catheterisation techniques are of paramount importance in diagnosing and assessing difficult cases of aortic stenosis. The most useful and simplest technique is by left ventricular puncture. In this method a wide-bore needle is thrust into the left ventricle at the cardiac apex and a fine nylon catheter is threaded through it into the aorta. By this means the aortic and left ventricular pressures are obtained and at the same time the level of the stenosis can be accurately assessed from an examination of the tracing on withdrawal of the catheter.

Selection of Cases for Operation

It has been stressed that all symptoms arising in aortic stenosis represent a severe form of the disease. In cases presenting with sycope, angina and breathlessness there is little doubt of the need for surgical relief. Where breathlessness, orthopoea and particularly paroxysmal nocturnal dyspnoea are present, surgery is needed as a matter of urgency. Where angina is the dominant feature this symptom may continue for some years and particular care should be taken to exclude dominant coronary atherosclerosis as the cause of the angina. Left ventricular puncture can be of real help in assessing these cases. The presence of heart block with Stokes-Adams attacks, right ventricular failure features and atrial fibrillation, all represent severe and near terminal features in this condition and may mean that the case is already too late for surgical correction.

Young children with aortic stenosis and non-calcified friable valves are a particularly difficult problem from the treatment point of view. There may be no symptoms or the child may commonly complain of a "stitch" in the abdomen on running. These cases are easy to treat surgically and have a low mortality. For this reason there is a tendency to offer these cases for surgery and for surgeons to accept them rather eagerly. On the other hand, their mobile valves are often very difficult to deal with adequately and at the same time it is only too easy to overdo the correction and turn a mild stenosis into a very considerable and crippling aortic regurgitation. In addition one has to remember that many of these cases will inevitably come to a second operation in later life when the congenitally deformed valves undergo thickening, calcification and stiffening at middle life.

Localised sub-valvar stenoses in young children, however, probably represent a more severe type of disease as it is unusual to find them after adolescence. The likelihood is that they have died earlier and surgery should be offered to these cases more readily than in cases of valvar stenosis. The distinction between valvar and sub-

valvar stenosis in the younger age-group can be difficult on clinical grounds alone and left ventricular puncture can be decisive.

Surgical Management

Closed aortic valvotomy has nowadays a small part to play in the treatment of aortic stenosis. It should probably be reserved for cases in congestive cardiac failure when open operation would be attended by a formidable mortality. Closed operation cannot hope to restore the functional mobility of a calcified disorganised valve but it may provide temporary palliation and in a small number of cases will reverse the downhill process of left ventricular failure allowing an elective open operation at a later period.

All other forms of aortic stenosis requiring surgical treatment are nowadays treated by open operation. This necessitates, among other things, an effective heart-lung machine which will be able to maintain a normal circulation and a normal temperature and physiology for between 2 and $2\frac{1}{2}$ hours of open heart surgery. In addition, a well-trained team is required for the post-operative and operative management of the case. During the period of open heart surgery, since the aortic root is open, coronary perfusion will not normally be available so that it is essential to protect the myocardium. This can be achieved by means of hypothermia or by artificial perfusion of the coronary orifices during the by-pass.

In every operation upon the aortic valve one must be prepared for a major valve reconstructive procedure since at any stage, particularly in the calcified valves the valve may disintegrate and require partial or total reconstruction. In non-calcified young valves the commissures may open quite simply or in the localised sub-valvar group it may be possible to dissect the obstruction away quite easily. The diffuse muscular obstructions are more formidable. It is very difficult to achieve an adequate muscular resection of the left ventricle.

The calcified disorganised aortic valve presents a most difficult surgical problem. In the most favourable cases one can carry out a decalcification or debridement of the calcific valve. In others in achieving the decalcification some valve substance may be lost and has to be made good with a patch of plastic or pericardial material. In other cases a whole cusp has to be replaced or more commonly a whole valve has to be inserted. Again this may be of plastic material or natural tissues. Of the latter, stored homograft aortic valves are proving at least as effective as plastic valves but the long-term prospects for all of these valve replacements has still to be decided.

Surgical Results

In a series of 78 open operations for aortic stenosis there have been 17 deaths (22 per cent mortality). In the first 39 cases the mortality was 30 per cent and in the last 39 it has been 13 per cent. Of the total number, 16 cases had non-calcified valves and there were no deaths in this group.

John Keats

by F. N. Doubleday

Every man who qualifies from Guy's has need to be a thinker. The physician assembles varied information about his patient and must then carefully consider what is the diagnosis and the right treatment. The surgeon thinks out the anatomy and technique of any operation which he is going to perform; he does not allow habit to blunt the alertness with which he approaches each case. So with all branches of medicine and surgery, thinking is essential.

John Keats was a Guy's man who qualified in 1816 and died in 1821; nearly 150 years later he is acknowledged as one of the greatest thinkers of our country.

Keats was born in the City of London, in Moorgate Street, in 1795. He was educated at a private school in Enfield kept by a Mr. Clarke, whose son, an assistant master in the school, became the close friend of Keats and gives this account of him as a school boy, "He was at work before the first school hour began and that was at seven o'clock; almost all the intervening times of recreation were so devoted; and during the afternoon holidays, when all were at play, he would be in the school—almost the only one—at his Latin and French translation; and so unconscious and regardless was he of the consequences of so close and persevering an application, that he would never have taken the necessary exercise had he not been driven out for the purpose by one of the masters". Another account says, "In my mind's eye I now see him at supper (we had our meals in the school room) sitting back on the form, from the table, holding the folio volume of Burnet's '*History of His Own Times*' between himself and the table, eating his meal beyond it". At school he took the first prize in each half-year, and was awarded a medal. It must not, however, be thought that work was his entire interest; he played cricket and was fond of fighting with his fists. The country round Enfield and Edmonton was then open, the streams ran through fields, and Epping Forest was near. He revelled in all this, the memory of it was stamped on his mind and he reproduced it in his poetry. Goethe has written, "What a young man seeks in his youth, of that has he the fullness in his age". How true this is for every student, the man who is full of keenness in his student days reaps the benefit of it when he becomes older. Keats wrote: "get knowledge, get experience". How valuable it is to a practitioner if by the time he is forty he has seen enough cases to give him the clinical experience which another man may only get by sixty.

In the summer of 1811 Keats left school and was apprenticed to Dr. Hammond, of Edmonton. Beyond some stories that he continued his pugilistic tendencies, not much is known of this period of his life; but recently Miss Mann has done valuable research on the connection between Hammond and John Henry Green, who was one of Keats' teachers at hospital. Green was born in the same neighbourhood

as Keats, he was apprenticed to his uncle, Henry Cline, a famous surgeon to St. Thomas's Hospital. In 1813 he married Ann Eliza Hammond, the sister of Thomas Hammond to whom Keats was apprenticed. Having completed his apprenticeship, Keats entered Guy's in October, 1815, and became a dresser to Mr. Lucas. Keats' lecture notes have been edited by Sir William Hale White and an interesting paper comparing them with the notebook of a contemporary student has been written by Mr. Winston. At this time the training of students at St. Thomas's and Guy's was jointly shared; lectures in anatomy and surgery were given at St. Thomas's, medicine and many other lectures at Guy's. Keats qualified in July, 1816, by taking the examination of the Society of Apothecaries. In a letter he describes opening a temporal artery, for the purpose of blood letting, and says that he did it successfully; he advised his friends on diet, drugs, soil and other medical subjects; he considered becoming ship's surgeon in an East Indiaman, and in 1819 thought of going to Edinburgh to obtain a degree as a physician. Although he never practised medicine he wrote that he was glad that he had kept his medical books. From his letters we gather some of the principles which influenced him as a student. "Every department of knowledge we see excellent and calculated towards a great whole. I am so convinced of this that I am glad at not having given away my medical books, which I shall look over again to keep alive the little that I know". While he was staying in Margate he wrote, "I read and write about eight hours a day. There is an old saying, 'well begun is half done,' tis a bad one, I would use instead, 'not begun at all till half done'."

Again he wrote: "I was proposing to travel over the north this summer. There is but one thing to prevent me, I know nothing—I have read nothing—and I mean to follow Solomon's direction, 'Get learning, get understanding'." This was a modest estimate of himself for at school and for all his life he had read widely, not only in poetry, Milton, Spencer, Wordsworth, Dryden and Dante, but in history, Robertson, Voltaire's "*The Age of Louis Quatorze*", and many other books.

Writing to Leigh Hunt in 1817 Keats observes, "I was too much in solitude, and consequently was obliged to be in continual burning of thought". There he wrote a poem of which the concluding sextet is as follows:—

> "*O ye! who have your eyeballs vexed and tired,*
> *Feast them upon the wideness of the sea;*
> *O ye! whose ears are dinn'd with uproar rude,*
> *Or fed too much with cloying melody,*
> *Sit ye near some old cavern's mouth, and brood*
> *Until ye start, as if the sea-nymphs quired.*"

During the year 1816, Keats composed poems, some of which have become famous; the most notable was one which he wrote after a visit to his friend, Cowden Clarke, who at this time was living in Clerkenwell. Clarke had a folio volume of Chapman's translation

of Homer; the two friends pored over it until the early morning, when Keats walked back to his lodging in Cheapside; within an hour or two he had written out and sent to Clarke the sonnet, "*Oft have I travelled in the Realms of Gold*", one of the most perfect poems ever written.

In 1817 Keats composed his first long poem, "*Endymion*" in which he represents himself as torn between the love of what is pure and beautiful, represented by the moon, with the earthly love of the dark maiden, eventually, in the fourth book he finds that they are really different representations of the same thing. The poem was begun in May in the Isle of Wight; the second book was written in lodgings in Well Walk, Hampstead; the third while he was staying with a friend, Bailey, in Magdalen College, Oxford, during the long vacation; the fourth book was composed while he was staying at Burford Bridge, near Dorking, in a letter he tells of a walk to the top of Boxhill to watch the rising of the moon. Bailey gave this account of their working methods in Oxford: "He wrote, and I read, sometimes at the same table, and sometimes at separate desks or tables, from breakfast to the time of our going out for exercise, generally at 2 or 3 o'clock. He sat down to his task, which was about 50 lines a day, with his paper before him, and wrote with as much regularity, and apparently as much ease, as he wrote his letters—sometimes he fell short of his allotted task, but not often: and he would make it up another day, but he never forced himself." In the afternoons they went for long walks or took a boat, exploring the river and creeks and reading aloud Milton, Shakespeare, and other poetry.

In the early part of the year 1818 Keats was in London attending Hazlitt's lectures at the Surrey Institution not far from Guy's. In March he joined his brother Tom in Teignmouth; their lodging faced towards the river in the days before the wharves were erected for the shipping of the granite from Dartmoor for the building of the new London Bridge; he stayed there until May. His poems often recall what he had seen:—

> "*. . . . 'twas a quiet eve,*
> *The rocks were silent, the wide sea did weave*
> *An untumultuous fringe of silver foam*
> *Along the flat brown sand. . . .*"

Later this year he set out with his friend Brown, on a long walking tour through the Lake District and the mountains of Scotland. The exposure and rough living lowered his resistance and brought on a sore throat, which compelled him to abandon his tour and return from Inverness to London by sea. During the latter part of this year he wrote part of a long poem termed *Hyperion*, the poetic structure closely followed that of Latin verse as it was used by Milton. The hero is a man whose life is directed only by the circumstances by which he is surrounded; this is contrasted with the God, Apollo, who is able to see far ahead and to shape his course accordingly.

Keats studied poetry in all its structure but he especially considered the sonnet. In its early form, as composed by Petrarch, it

consisted of eight lines, the octet, followed by six lines, the sextet. Shakespeare varied this by writing his sonnets with three sets of four lines, quatrains, and ending with a couplet. Keats composed sonnets in both ways but in 1819 he expanded his poems into a longer and more irregular form and named them "Odes". The result of this thinking was to produce the great Odes of 1819. In the early part of the year the *Ode to Pysche*, the *Ode to a Grecian Urn*, and the *Ode to a Nightingale*, written in the garden of Keats' house in Hampstead, where you may still sit and read it aloud, although the nightingale no longer sings there. Later in this year, at Winchester, he wrote the *Ode to Autumn*. These odes are considered to be the high water mark of Keats' poetry and are among the great treasures of English literature. During 1820 the pulmonary tuberculosis from which he was suffering grew steadily worse. In September he went by sea to Italy, in the hope of improving his condition, but in February, 1821, in Rome, he died. Keats had greater difficulties to meet than anyone who reads these pages can have; he faced them like a man, with undaunted courage. He is a Guy's man whose name has a secure place in the history of English literature.

REFERENCES

COLWIN, Sir Sidney. *Life of John Keats*. London, Macmillan and Co.

DOUBLEDAY, F. N. *The Portraiture of John Keats*, G.H.R., 1955.

Idem. *John Keats and the Borough Hospitals*, Keats-Shelley Bulletin, 1962.

MANN, Phyllis G. *John Keats: Further Notes*. Keats-Shelley Bulletin, 1961.

MURRY, Midleton. *Keats and Shakespeare*. O.U.P.

BUXTON FORMAN, M. *John Keats Anatomical and Physiological Note Book*. O.U.P., 1934.

HALE WHITE, Sir William. *Keats as a Medical Student*. *G.H.R.*, 1925.

Idem. *Keats as Doctor and Patient*. OU.P., 1938.

WINSTON, George. *John Keats and Joshua Waddington*. G.H.R., 1943.

CORRESPONDENCE

SIR, In the Gazette issue of 29th June last, you quote the following query from "La Presse Medicale" . . . *Les médecins anglais ne trouveraient-ils pas dans leur pays les conditions d'une carrière heureuse*?"

In the realm of general practice in this country, I would say no, but it could so easily have been—yes. Not, however, under the present system: a system which was conceived in the early part of this century. Surely in this affluent age the patient and the practitioner discover something, better than " the panel".

In common with many of my contemporaries who were obliged to emigrate in the mid-fifties, because of lack of opportunity here at that time: I have found *d'une carrière heureuse*, in a system of practice using a subsidised fee for service method of payment. General practice in such a system I have found to be stimulating, satisfying and results in a higher standard of practice than is generally found in Britain. This in turn results in a happier Doctor-patient relationship.

Yours, etc.,

A. DOMINICK.

Felix Court,
Sea Road,
Felixstowe, Suffolk.

REVIEWS

ELEMENTS OF PSYCHO-ANALYSIS.

by W. R. Bion. Heinemann. 1963. Pp. 110. *Price* 15*s*.

This book is a continuation of "Learning from Experience" (Bion 1962). Its main theme is devoted to the development of a grid as a means of stating the elements of psycho-analysis and a step toward theoretical construction in accordance with the rules of logic. Bion suggests that the elements of personality should be thought of along lines similar to that of mathematical functions and that symbolic notation be used to describe these elements.

In its present form this book is unlikely to fulfil the need for simplfying and systematizing analytic material—the concepts are ambiguous and Dr. Bion's reasoning tends to be erratic and difficult to follow.

Its interest would seem to be confined to analysts who are concerned with analysing analysis and who accept as an article of faith the ideas contained in Mrs. Klein's theory of personality, together with Dr. Bion's esoteric but unconvincing formulation of their measurable significance.

F. Lezard.

MEDICINE FOR NURSES:

by W. Gordon Sears. Arnold. 1963. Pp. 543. *Price* 24*s*.

It was a pleasure to review this book. It is beautifully produced on good quality paper at the very reasonable price of 24s. The text, which has been brought well up to date in the new edition, is well written in a style which is easy to read, the factual matter being clearly presented under headings. The level of knowledge is just right for most student nurses in training, but the more able student has been catered for by the occasional inclusion of extra material in smaller print. The inclusion of a chapter of examination questions at the end of the book is a most useful addition for the student nurse. The illustrations are comparatively few, but those included are very good, the one of the measles rash being particularly worthy of mention. There is just one snag. In the section on artificial respiration, the phrenic nerves are still referred to as efferent nerves. This probably started in life as a slip of the pen, or a printer's error, but it is unfortunate that the error has been allowed to remain to mar an otherwise very worthy book.

D. Machin.

BIOCHEMICAL VALUES IN CLINICAL MEDICINE:

by R. D. Eastham. John Wright. 1963. Pp. 164. *Price* 15*s*.

This is the second edition of a useful pocketbook of normal values for a wide range of biochemical tests, lists of conditions where they are changed, and the reasons for the changes. The new edition has been brought up to date and includes details of a wide range of enzyme determinations. References are given under each test.

Every clinical pathologist has his own idea of what constitutes a normal value. The ranges given here are on the narrow side, but the author rightly points out that normal values and the methods used should be a subject for discussion between clinician and clinical biochemist. All the commonly performed tests (and some others, not so commonly performed) are included.

This book will find a useful place in the pocket of the student's suit or the houseman's white coat. At first sight the price seems excessive for a small volume with paper covers; but initial appearances are deceptive and the purchaser will find his fifteen shillings to have been well spent.

D. I. K. Evans.

In the review of the "Handbook of Operative Urological Surgery", which appeared in our last issue, the last word of paragraph eight should read urologists, not theologists.

SPORT

RUGBY

Next Saturday sees the start of another season for the XV with a match against Catford Bridge. Kick-off 3.15

The captain this year is Ian Baker, who learned his rugby at Bristol Grammar School, where he played also for Bristol, Gloucester and S.W. England Public and Grammar Schools, and also earned an England Schoolboy Trial, as wing forward. Since coming to Guy's, he has played in all positions in the back-row and was also centre three-quarter for the early part of his career here. During this time he has also played for Bristol first team.

However, one must also record his absence from the field for almost two years with an injury and only his enthusiasm for the game has enabled him to restore himself to the necessary peak of physical condition to participate in top class competitive football. Baker himself sincerely believes that it will be essential to maintain a high standard of fitness throughout the season. He looks forward, particularly, to winning matches against clubs of comparable strength (where losses are usually notched up by a few points, and in so doing maintain the psychological approach noted against better-class opposition. The last match of last season, where Esher were beaten comprehensively by attractive team rugby, set a style of play which he feels the Hospital should be able to sustain, and with success.

Training has been conducted individually for the first four weeks, but official training sessions are now in progress, and will include a week-end at The Thatchings. The presence of a large number of players of average ability, but few stars, should provide considerable stimulus for competition to gain the side. As with recent years, no apparently outstanding newcomers will be arriving, and the Oxbridge recruits are apparently not sportingly inclined. There is certainly a dearth of wing three-quarters at the moment, and anyone in the Hospital with any experience would be most welcome.

Last season, the bad weather tended to make players lose interest. Many believe that it is a privilege to play for Guy's and this year's captain looks forward to all players making an effort to maintain Guy's reputation in the rugby world. He deserves well.

Fixtures—1963

September	14	Catford Bridge	*H.O.P.*	k.o. 3.15
,,	18	Cambridge City	*H.O.P.*	k.o. 5.30
,,	21	Blackheath	*H.O.P.*	k.o. 3.15
,,	28	London Irish	*Sunbury*	
October	5	U.S. Portsmouth	*Portsmouth*	
,,	12	Cambridge University ..	*Cambridge*	
,,	16	Oxford University	*Oxford*	
,,	19	Bedford	*H.O.P.*	k.o. 3.00
,,	26	Cheltenham	*Cheltenham*	
November	2	Old Blues	*H.O.P.*	k.o. 2.45
,,	9	Old Haberdashers	*Elstree*	
,,	13	London University	*H.O.P.*	k.o. 2.45
,,	16	Rosslyn Park	*H.O.P.*	k.o. 2.45
,,	23	To be arranged		
,,	30	Old Whitgiftians	*H.O.P.*	k.o. 2.30
December	7	Streatham	*Thornton Heath*	
,,	14	Old Cranleighians	*Thames Ditton*	
,,	21			
,,	28	Old Merchant Taylors ..	*H.O.P.*	k.o. 2.30

CRICKET

The match against Old Alleynians, was a resounding triumph for the XI. An opening partnership of 43 by Huins and Knott, who had been dizzily promoted to open the innings, was backed up by further good performances from Myall

(making light of his weighty problems), Healey, Joyce and Biggs (who, playing on his home ground, threatened danger with every ball). Knott, as if to celebrate his elevation, bowled with fine fire and control and set problems that the opposing batsmen could not answer. This was backed up by superb catching and a notable afternoon's work left the team winners by 93 runs.

In a new fixture (reported next page) on the eve of the Oval Test match, the dentists forsook their chairs and engaged in fratricidal battle. Features of the play included a fantastic catch by B. Cryer who, turning like a rising trout at mid-off, caught the ball coming over his head, as if it was a fly; the running out of M. Naylor, whose mariner's gait failed to allow him to face the bowling; J. Norman, sporting a rather loud Old Boys' sweater, provided the backbone of the innings; P. Ayling's judicious running between the wickets which left the fielders in confusion; and J. Osborne's batting. Unlike the Oval, the sprinting to the pavilion, and the welcoming bar, was completed without undue hindrance from that lone spectator.

BLUES COMMITTEE

The Meeting of the Hospital Blues on August 16th elected the following members to serve on the Blues Committee for the Academic Year 1963-1964:

T. J. Huins (Cricket Club), Hon. Secretary.
I. A. Baker (Rugby Football Club).
L. G. Parry (Association Football Club).
R. W. T. Myall (Cricket Club).
P. Peace (Athletics Club).
R. L. Strickland (Hockey Club).
D. A. McCay (Golf Club).

Reports and Results

CRICKET

AVERAGES, 1963

BATTING	Innings	Not out	Runs	Highest score	Average
Hambleton, G. ..	22	3	552	85*	29.0
Knott, N. J. ..	16	5	264	57	24.0
Crafts, J.	15	3	265	57*	22.1
Huins, T. J.	14	0	308	49	22.0
Silk, D.	19	1	386	114	21.3
Biggs, D. A	10	0	193	53	19.3
Myall, R. W. T. ..	24	2	413	58*	18.8
Edgar, A.	16	3	204	69	15.7
Reekie, I.	10	3	105	23	15.0
MacGregor, H. W. ..	22	1	308	41	14.7
Davoodbuoy, S. ..	13	3	146	50*	14.6
Walter, M.	15	5	123	25	12.3
Jones, M. S.	14	2	139	30	11.6

Also batted.—G. Cook, 52, 78*, 0. J. W. Norman, 23, 60, 30, 6, 30*. M. Joyce, 69*, 26, 16, 28, 10. N. Healey, 2, 0, 8*, 42*, 12. M. Appleby, 4, 6, 12, 23, 51, 29, 8, 1, 1.

BOWLING	Overs	Maidens	Runs	Wickets	Average
Miller, D. ..	61	18	125	19	6.5
Knott, N. J. ..	270.1	51	633	48	13.2
Davoodbuoy, S. ..	186	47	471	35	13.5
Hambleton, G. ..	65.3	7	188	13	14.5
Walter, M. ..	239	54	701	44	15.9
Edgar, A. ..	112	15	332	19	17.5
Crafts, J. ..	139	19	523	27	19.4
Huins, T. J. ..	100	24	248	10	24.8

Also bowled.—P. Banks, 32-4-109-9, I. Reekie, 36-1-168-7. D. Biggs, 37-8-97-6. G. W. Cook, 23-2-81-4.

Batting Averages—10 innings qualify.
Bowling Averages—10 wickets qualify.

Catches: H. W. MacGregor, 13; R. W. T. Myall, 9; A. Edgar, 9; G. Hambleton, 8; M. Walter, 8; S. Davoodbuoy, 8; I. Reekie, 7; N. J. Knott, 7; T. Huins, 5.

1st XI v. OLD ALLEYNIANS

At H.O.P. 24th August, 1963.

Guy's.

N. Knott, ct Pettifer, b Hutchinson ..	18
T. J. Huins, ct Simmonds, b Kirkman	41
R. W. Myall, ct Mayatt, b Wood ..	30
H. MacGregor, st Pettifer, b Kirkman	9
M. Joyce, *run out*	13
N. Healey, ct Mayatt, b Hutchinson ..	25
D. A. Biggs, ct McKean, b Wood ..	13
M. Walter, ct Kirkman, b Hutchinson	1
A. Morris, ct Pettifer, b Hutchinson ..	4
I. A. Baker, ct Pettifer, b Hutchinson	8
P. Banks, not out	1
Extras	10
Total	173

Old Alleynians, 80 (N. Knott, 7—25).

Result: Guy's won by 93 runs.

Guy's won the toss and elected to bat first in the belated and last fixture of the season against the Old Alleynians. The start was delayed by a heavy shower and the weather continued gloomy as Huins and Knott settled down to open the innings. Both batsmen found runs easy to come by and the score mounted briskly until Knott was caught

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behind for 18. Huins was joined by Myall, who kept the scoring up by some good running between the wickets. Huins, stepping across his wicket, pulled and hooked strongly to the leg-side boundary and included a fine six before being caught for 41. The pyriform Myall continued to stroke the ball well and took several more well-judged singles until caught for 30. MacGregor and Joyce went quickly, but Healey settled down to produce some of the attacking form he had shown on tour. He scored a forceful 25. The tail did not last long and after Banks had scored his customary single, the innings closed for 173.

With the commencement of the Old Alleynians' innings, the opening bowlers, Knott and Walter, found the wicket with plenty of life and the former with his fourth ball gained some movement off the pitch and put down the first wicket. Walter was unlucky to have several catches put down in his early overs, but getting one to lift off a length, the same bowler had Kirkman caught behind off his gloves. Continuing for almost the remainder of the innings, both bowlers kept the batsmen well contained and Knott, aided by good catches by Myall, Biggs and Banks, as well as taking two himself, finished with an analysis of 7 for 25. For the last twenty minutes, Banks and Huins were brought on and Banks, getting one or two to turn, secured a catch at deep square leg. Huins took the final wicket, when the batsman, attempting to cut, tickled one to the now lithe Baker behind the stumps. The Old Alleynians' totalled only 80 to give the Hospital victory by 93 runs.

A. N. OTHER

DENTAL STAFF v. DENTAL STUDENTS

At H.O.P. 21st August, 1963.

Students.

M. Murray, ct Cryer, b Juniper	4
N. Knott, b Juniper	4
J. A. Thomas, b Osborne	0
H. MacGregor, ct Penhill, b Juniper	25
C. Wright, ct Page, b Osborne	0
R. Brown, b Osborne	17
A. Allen, st Norman, b Juniper	7
A. Buchanan, not out	82
E. Price, not out	21
P. Liddiard, R. Myall } Did not bat.	
Total (for 7 wkts. dec.)	166

Staff.

B. Penhall, ct Wright, b Myall	18
J. Page, b Liddiard	1
R. Juniper, ct Buchanan, b Myall	7
J. Osborne, ct Wright, b Murray	28
J. Norman, ct Myall, b Murray	62
M. Naylor, run out	0
C. Rowe, ct Buchanan, b Knott	0
B. Cryer, b Myall	14
L. Visskin, run out	3
P. Ayling, not out	4
L. Kessel, st Brown, b Liddiard	1
Total	145

On Wednesday, August 21st, at H.O.P., the dental staff played the students. In varying degrees of sartorial elegance, the staff took to the field. Juniper opened the bowling, supported by Osborne. Havoc was wrought amongst the early batsmen, and after fifteen minutes play the students were 20 for 4. However, recovery came when Buchanan entered the fray. With unerring certainty, he caused the more portly of the fielders to chase abortively to the boundary. It was with much relief that the innings was declared closed at 166 for 7 wickets.

After a leisurely tea, the students were coaxed into the field, expecting to reach the bar by opening time However, largely due to Norman's fluent hitting the staff reached 119 for 4 wickets. The turning point came, however, when the grandfather of the sides, Dr. Naylor, was unable to hobble the necessary twenty yards to complete a run. After this, the science of cricket was lost, although several of the batsmen showed staunch determination. A large vociferous gentleman in the crowd, obviously enjoying himself, gave advice and applause generously.

HOSPITAL INFORMATION

PASS LIST

UNIVERSITY OF LONDON

Special Second Examination for Medical Degrees.

June, 1963

P. B. Ashcroft	M. I. L. Joseph
R. S. B. Bramwell	K. Landon
T. S. Brown	S. O'd. McCall
J M. Brummitt	C. P. Malpass
L. D. Byer	D. B. Mathias
J. E. Davies	A. J. O'Donnell
S. F. Din	G. E. Ratcliffe
M. F. D'Souza	T. Roe
J. E. Dussek	D. H. Sawyer
J. R. Gill	J. R. C. Sharp
M. R. Herrington	D. F. H. Wardle
D. A. N. Johnson	Diana J. Whitfield

Special First Examination for Medical Degrees.

June, 1963

Sara J. Endean	Barbara S. Malone
Josephine M. Greenwood	P. R. Oaten
	M. A. Simpson
T. A. Harrison	P. L. D. Walde
Anne B. Lysholm	

The following have qualified for exemption from the First Medical:

Ann R. Alexander	Wendy J. Higlett
M. I. Appelby	M. J. H. Hillier
D. V. Ash	Teresa Ivanans
R. Aumeerally	Ann M. Jarvis
N. M. Bahemuka	Jennifer M. C. Jones
D. L. Bartlett	J. B. L. Kabuubi
R. A. Billings	R S. Kerner
Phillipa G. Blaxter	Joan R. L. Milner
P. J. Burton	Mary E. Opie
C. N. H. Cawthorne	M. G. Pearce
N. P. Clarence	G. G. Pugh
N. G. Daws	S. B. Rear
D Evans	N. A. E. Robertson
R. D. Forrest	D. J. Sherwood
P. W. Green	Felicity E. L. Smith
D H. Haines	R. D. Spicer
P. Hall	R. J. von Witt
Jeanette C. Ham	N. J. S. Voss
R. B. Hartley	

B.Sc. (Special) Examination, July, 1963.
Anatomy.

Second-class Honours—Upper Division

A. E. Raynes D. Tong

Second-class Honours—Lower Division

P. K. Peace Clare E. Stannard
M. E. Pembrey

Physiology.

Second-class Honours—Upper Division

M. H. Jourdan G. Smith
G. G. Parfitt R. A. J. Spurrell

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May and July, 1963.

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S. A. Barkham P. Ricketts
S. C. Bristow R. Starns
J. Camp E. A. Vanstone
D. C. B. Cook S. M. Walker
A. Corry V. A. Wallace
M. Elliott A. Williamson
G. S. Gilbert J. Witting
J. C. Ginnings

Intermediate Examination.

S. Ablitt M. A. Kemp
V N. Baker E. S. Read
S. M. Bartlett P. Scott
W. D. Chevallier P. Smith (credit)
M. E. Clarke F. C. Starr
M. L. Coleman G. E. M. Taylor
K. M. Collen S. S. Wells
A. Falconer J. Woodward

Final Examination.

P. M. Barnes I. Germanacos
S. Bates M. C. Huggett (credit)
M. P. M. Buchele M. A. Moore
C. M. Chapman E. S. Read
W. D. Chevallier J. E. Rugg,
M. L. Coleman P. Scott
J. Cousins G. M. Sims

PAPERS BY GUY'S MEN

Brown, L. J. The prognathous mandible. *J. dent. Ass. S. Afr.* 1963, **18,** 258.

Burn, J. H. Pharmacology, 1913-1963. *Med. Wld.*, 1963, **99,** 280.

Burn, J. H. Release of acetylcholine by sympathetic nerve stimulation at different frequencies. *Brit. J. Pharmacol.*, 1963, **21,** 97.

Douthwaite, A. H. Developments in medicine in the last half century. *Med. Wld.* 1963, **99,** 275.

Evans, G. Two causes of wasting. *Proc. R. Soc. Med.* 1963, **55,** 699.

Everall, J. D. and others. Griseofulvin administration and porphyrin metabolism. *Lancet* 1963, ii, 318.

Fry, John and others. Appointments in general practice. *Lancet* 1963, ii, 397.

Poulson, Evelyn and Robson, J. M. Prevention by antagonists of the toxic action of 5-hydroxytryptamine on pregnancy. *Brit. J. Pharmacol.*, 1963, **21,** 150.

Rees, R. J. W. and others. Applicability of experimental murine leprosy to the study of human leprosy. In Ciba Foundation Study Group, *The Pathogenesis of Leprosy*, London, 1963, p.39.

Rees, R. J. W. and others. Experimental observations related to the histopathology of leprosy. *Ibid.* p.3.

Rushton, M. A. Bony enlargements of the jaws. *J. dent. Ass. S. Africa*, 1963, **18,** 213.

Rushton, M. A. Some lesions of the oral mucosa. *Ibid.* p.216.

PERSONAL

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Group Capt. R. O. Yerbury, C.B.E., M.D., Royal Air Force Hospital, Wroughton, Nr. Swindon, Wiltshire.

BIRTHS

BANKS.—To Diana and Peter Banks, a son, *David Andrew Chorley*, on 7th August, 1963, in Victoria.

MEYRICK.—To Elizabeth (née Carlton, S.R.N., S.C.M.) and Jeremy Meyrick, B.M., B.Ch., a son, Alistair Mark, brother for Andrew and Simon.

DEATHS

PITT.—On August 20th, 1963, Charles Sydney Pitt, M.R.C.S., L.R.C.P., L.D.S., R.C.S., D.P.H. of 11, Wilderness Road, Earley, Reading, Berks, aged 55 years.

MOFFATT.—On August 27th, 1963, Paul McGregor Moffatt, F.R.C.S., M.D., M.R.C.P., D.O.M.S., of 73, Harley Street, W.1.

GUY'S HOSPITAL GAZETTE

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Editors *W. G. Reeves*
T. C. Davis

Sports Correspondent *E. Tiller*

Guy's Hospital, London

PASSIM

At a recent meeting, the *Gazette* committee regretfully accepted the resignation of Ian Baker as Assistant Editor. Previously our first and very able Sports Correspondent, he has contributed much valuable work as an editor. As Captain of the Rugby Club, he now takes up the reins for an arduous season's combat ahead and we hope that last Saturday's resounding victory will be the prelude to sustained success during the coming weeks. At the same meeting the committee appointed Timothy Davis as the new Assistant Editor.

Status Quo

Rather in the spirit of the aftermath of the Great Train Robbery, we publish on page 474 of this issue the pictures of certain wanted men. But neither are they alive nor their identities known. They are, in fact, photographs of four busts which were originally sited in the sedate surroundings of the old Court Room and staircase, irreparably damaged during an incendiary raid on 16th April, 1941. The busts themselves were salvaged but the plinths bearing the names were destroyed. As the East wing is now being reconstructed it is hoped that these and other relics of the old building will be reinstated, if possible with their identity attached. Thus, if any of our readers know who these men are, we would be very grateful if they would send us this information.

The new and revised version of the East wing has now grown to its full height and we notice that much of the brickwork has been laid to reflect the original pattern, still in evidence on the facing Chapel wing. But however aesthetically correct, this conservative plan has created certain problems of its own. For although the cementation scheme for stabilising the foundations has proved very successful, certain of the walls of the remaining structure have assumed a gentle curve rather than the more usual straight line. Consequently, many of the new bricks have had to be laid in a similar fashion in order to marry the new with the old: a practice apparently not conducive to piece-work by the brick-layers. Also at present an inquisitive eye is disturbed by the clashing of colours of the old and new brick, and the problem of equalising the two is at present under discussion : should the smoke-stained section be cleaned or the new bricks soot-washed. Perhaps a convenient compromise will provide a neutral but homogenous result. A further touch of authenticity is being engineered by the addition of several period street lamps to the front court to match that one already standing outside Matron's House. These have been rescued from Margate for the princely sum of twenty pounds apiece.

The new wing, which will contain the Students' Club and accommodation for House-officers, is scheduled to be completed in May of next year, providing that the multitude of problems such a venture creates does not prove too obstinate. But it appears that we

are not alone in our hesitations, and we will not be surprised to hear in the near future that another use has been found for the old St. Thomas's Hospital buildings now occupied by the Post Office Telephone Engineers.

Medicine Abroad

With the summer of our discontent now over the few who have been abroad on clerkships have returned to winter and a little time to reflect on the benefits or other of experiencing medicine abroad. Certainly it is different. One colleague who spent one month practising paediatrics in Eastern Europe astounded his seniors by asking when the mothers could visit their sick children?

"But we don't encourage them to come at all," he was told. A far cry from Apley *et al.* However different the approach may seem, one must realize that the social and psychological environment is in many cases very different from the quiet and efficient one to which we are used in London.

In Jugoslavia, a country interesting itself more and more in technology and industry, the student curriculum entails an enforced period of industrial medicine study not only in lectures but a comprehensive course in a factory as well. The clinical students have a three-month long summer vacation, during which they are encouraged to spend at least one month in a branch of medicine which especially interests them, such as in industrial medicine or working in a chemical factory or a tuberculosis sanatorium or a cancer hospital. The pattern of study in Western Europe follows more closely that to which we at Guy's are used, but with more emphasis laid upon formal lectures, and one wonders whether it would be more useful for students travelling abroad to experience early on in their careers a system different from their own. One month seems sufficient to taste the achievements and a little of the problems that less economically fortunate countries than Britain face in the organization of their medicine. Not only can one see medicine practised day by day but also mix with the people on whom it is practised, see their living conditions, try to understand their aspirations and disappointments: in fact, build a whole picture of a foreign society. This is probably the greatest benefit of seeing medicine abroad, particularly as a student; that one is forced by circumstances to join in the natural circle of events that revolves around the unit to which one is attached, and live within the unit. One is involved in another culture and another way of life so that the conflicts of individuals are new, predisposing factors to disease seem different and one can begin to discern that medicine is not a close defined entity in South East London, but something also influenced by climate, political change and social custom and circumstance.

A clerkship abroad may not be of immediate academic help but one has a chance to encounter conditions and ideas that may seem odd, strange, even heretical at first, but with a longer, wiser look, to fit into a scheme of medicine which has now become wider and more compelling.

GUY'S DIARY

SEPTEMBER

EXHIBITION.		*Goitre.*	
24th	T.	1.00	Mr. BEARD. Clinical Lecture.
27th	F.	1.00	Mr. B. K. RANK, Sims Travelling Professor of the Royal College of Surgeons. Clinical Lecture. *The Early Diagnosis of Melanomata in Relation to Treatment.*

OCTOBER

EXHIBITION.			
4th	F.	1.00	Professor BUTTERFIELD. Clinical Lecture.
8th	T.	1.00	Mr. ECKHOFF. Clinical Lecture.
10th	Th.	1.00	Dr. HARDWICK. Clinical Lecture.
11th	F.	1.00	Mr. BRAIN. Clinical Lecture.

AFRICA TODAY
Quodlibet

The rapid change and deterioration of the South African situation has caused Britain to use the veto in the Southern Rhodesian debate in the United Nations for only the third time in its history. These changes make it difficult for a fully occupied student or qualified person to understand what is basically going on and why. For this reason the Quodlibet Society has organised a series of three talks entitled *"Africa To-day"*. In them it is hoped that members of the Hospital will come and put forward their views and express their fears to people who have close contact with the situation as it appears at the moment.

The first will be on September 26th at 8.0 p.m. in the Students' Club upper lounge, and will be given by John Lang, an eminent South African lawyer and a member of the South African Liberal Party who attempted to represent the condemned at Sharpeville, but was interned for four months, and of whom the President of the Republic is reported to have said, " This is the most dangerous man in Africa". He will speak on " Southern Africa and its future".

The second talk on October 17th entitled " Drum", will be given by Alan Rake, an ex-regional editor and manager of the African weekly in East, West and South Africa, who has written a biography of Tom Mboya and who is at present editor of " Africa, '63".

The third talk will be given by Mr. Maurice McWilliam, a member of Montague's Bank, who will state the position of Britain in relation to Africa in broader terms.

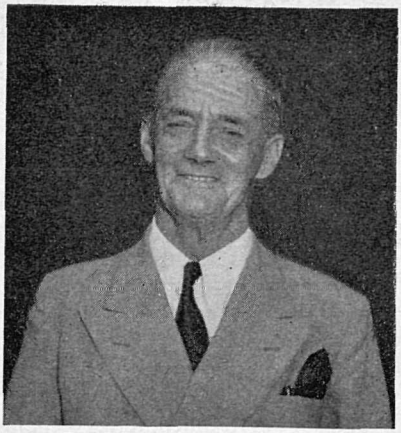
All members of the hospital are cordially invited to come and express their views at these meetings.

GUY'S HOSPITAL REPORTS
Vol. 112 No. 3

The third issue of Volume 112 of the Reports is dedicated to Professor G. Payling Wright on his retirement, and contains articles by many of those who have been members of his department or closely associated with him. This and other issues of the Reports are available as they are published, to all the Medical and Dental House-officers and clinical Medical students at the Wills Library. Others may obtain copies on application to the Hon. Treasurer, Guy's Hospital, at the usual subscription rates.

Lord Nuffield

An Obituary



Lord Nuffield's life and achievements have been fully and ably dealt with in the press, in some cases by men such as Sir Miles Thomas, who worked with him for many years. Readers of the *Gazette,* however, may be interested to hear in more detail of Lord Nuffield's close connection with Guy's.

Probably the first Guy's man to meet W. R. Morris was Sir William Hale-White. Although of very different, if indeed not opposite temperaments, they both enjoyed one another's company. Sir William often spent pleasant week-ends at Huntercombe Golf Club, which was owned by Mr. Morris. In the summer of 1925, Sir William recruited two Guy's men, Professor Johnston and Dr. Conybeare, as members of the club. From such small beginning there developed a close liaison between Mr. Morris and Guy's.

Among those who had the closest connection with the Club were Professor T. B. Johnston, Mr. Herbert Eason, Dr. R. R. Macintosh, Dr. Geoffrey Dowling, Mr. Nils Eckhoff, Mr. W. D. Doherty, Mr. Gayer Morgan, Mr. C. Gill-Carey, Mr. T. T. Stamm, Dr. E. R. Boland and Dr. J. J. Conybeare.

It is well known that Lord Nuffield, as he became in 1936, took a keen interest in medicine. Indeed he was often heard to say that had his financial position in earlier life permitted, he would have chosen to become a surgeon. There was nothing he liked better than talking to medical men and students over a gin and French. It must be admitted that some of his views and theories were somewhat bizarre and he tended to apply them to his own symptoms. Thus he laid great stress on the idea that some foods and drinks created "acid", and must be avoided or counteracted by sodium bicarbonate. He was also very interested in the mechanism of sleep and he often maintained that he himself never slept for longer than one hour at a time. He was a great admirer of Sir William Osler, who is said to have diagnosed him as suffering from duodenal ulcer in 1904. This ulcer, Nuffield said, was peculiar in that it could never be demonstrated by X-Rays.

Nuffield always stressed the fact that he was difficult to anaesthetize. When he had an appendicectomy at Oxford the anaesthetic was open ether. Post-anaesthetic cough and vomiting burst open the wound which had to be re-sutured. Some years later Sir Farquhar Buzzard, Regus Professor of Medicine at Oxford, approached Nuffield with a view to endowing a research centre in the Radcliffe Infirmary. Nuffield was asked to found three Nuffield professorships, in Medicine, Surgery, and Midwifery. "Why not a Professor of Anaesthetics," asked Nuffield, remembering his own most unpleasant experiences after his operation. The University authorities were at first somewhat hesitant as to whether anaesthesia was a sufficiently important subject to justify a professorship. They soon realized, however, that when Nuffield had made up his mind he was not easily persuaded to change it. In due course a Guy's man, Dr. R. R. Macintosh, later Sir Robert Macintosh, was appointed as the Nuffield Professor of Anaesthetics—incidentally, the first professor of this subject in the world. The great advances in anaesthesia in the last few decades have to some extent been the result of Nuffield's foresight and determination.

In common with most voluntary hospitals, Guy's was very short of beds for private patients. Nuffield became aware of this when on a number of occasions he wished to get one of his higher executives into Guy's. Quite suddenly and without any previous discussion Nuffield told Professor T. B. Johnston, as they walked round the golf course, that he would like to provide a building to accommodate patients of moderate means. This was indeed a bolt from the blue, and a very welcome one both to Governors and Staff. There were many problems connected with the siting and design of the building and the provision of nursing staff. These were dealt with in the main by a specially appointed committee under the chairmanship of Professor Johnston.

Lord Nuffield's offer was made in the summer of 1933 : the Foundation Stone of Nuffield House was laid by him on October 3rd, 1934, and the building was opened by the Prince of Wales on December 10th, 1935, only a few weeks before he ascended the throne in 1936.

The total cost of building and furnishing Nuffield House was £73,000, a trifle over £1,000 per bed. However, this was by no means the only large benefaction given by Nuffield to Guy's, for in 1936 he provided £89,840 to build an addition to the Nurses' Home.

Nuffield, in spite of his many business commitments and the numerous charitable enterprises which he sponsored at home and abroad, agreed to being appointed a Governor of Guy's in 1934. Two years later he became Treasurer following the resignation of Mr. F. P. Whitbread. Though Nuffield regularly attended the monthly meetings of the Court of Governors, he firmly and probably wisely, refused to take the chair as he felt his first-hand knowledge of the numerous

aspects of the hospital was insufficient. Consequently, Lord Cunliffe took the chair, but Nuffield's interest in all aspects of hospital business continued.

Nuffield's benefactions, details of which are available to the public, amount to some thirty million pounds, but probably no one knows how much he distributed privately. Those who knew him well are aware of individual cases where he relieved serious and unexpected hardship. The amount of such gifts is pure speculation. As an example, an official in a teaching hospital, whose probity had never been even queried, succeeded in persuading a number of nursing sisters and female administrative staff to hand over their savings for investment. Attractive terms were offered, 7 per cent interest and return of capital at a week's notice. The organiser of this apparently benevolent scheme for saving went bankrupt and retired to prison for various defalcations of hospital funds. His unfortunate creditors lost what amounted in some cases to their lifelong savings.

Nuffield heard this sad story at a general discussion on "crooks". He at once asked for the names of the victims and within a few days he had repaid their losses in full. The total amounted to about £5,000. The letters of thanks which he received moved him deeply.

Until his health began to deteriorate some years ago, Nuffield usually came to dinner in the Club when members and guests were staying for the week-end. He greatly enjoyed talking of his early life, and had marvellously clear recollections of his adventures with bicycles and cars. Sometimes he played deck tennis in the badminton court at the Club, being completely ambidextrous and outstandingly good. At squash, on the other hand, he was completely hopeless and apparently quite unable to learn to serve.

When he was 78 he won the deck tennis singles on a large Orient liner, no mean feat when most of his opponents were young and athletic.

During the past 30 years or more, very many Guy's students, house-officers, registrars and members of the staff have happy memories of week-ends at Huntercombe, with Nuffield presiding at dinner. He certainly enjoyed these occasions as much as the visitors. His memory for names was never good but he never forgot a face.

Guy's was indeed fortunate from every point of view in its happy associations with Lord Nuffield. The fine statue by Maurice Lambert, R.A., at present inaccessible owing to the rebuilding of Guy's House, will be a permanent reminder to future generations of his generosity to Guy's.

Transplantation Immunity

by SHIREEN SALEH
Department of Pathology

Some basic genetical and immunological principles governing the transplantation of tissues between genetically different individuals are described, and experimental procedures which favour prolonged survival of such tissues are discussed.

Attempts to transplant the tissues of one individual to another are, at present, very much in the public eye. Most people are aware of the complications which may result from incompatibility of blood group antigens after blood transfusions. Just as compatibility of blood group antigens is necessary to avoid transfusion reactions, so compatibility of donor and recipient tissue antigens is necessary if a graft between two individuals is to survive. The basic mechanisms involved are not only of relevance to surgical replacement therapy—principles derived from transplantation are likely to be of value in understanding other facets of medicine such as the pathogenesis of allergic and autoimmune disorders.

Genetic Principles

In 1916, Little and Tyzzer transplanted a tumour, from a partially inbred strain of mice, to the F_1, F_2 and backcross generations obtained by mating this strain with other heterogenous strains of mice. (See Figures 1-3). Tumour growth was observed in all the F_1 hybrid but only in a few F_2 and resistant backcross mice. On this evidence, they suggested that the successful growth of a tumour transplant to another strain was dependent on the presence of multiple susceptibility "factors" which were gene-determined. If the "factor complex" of donor tissue was represented in the recipient, the transplant would grow. At that time a full analysis of genetical principles governing

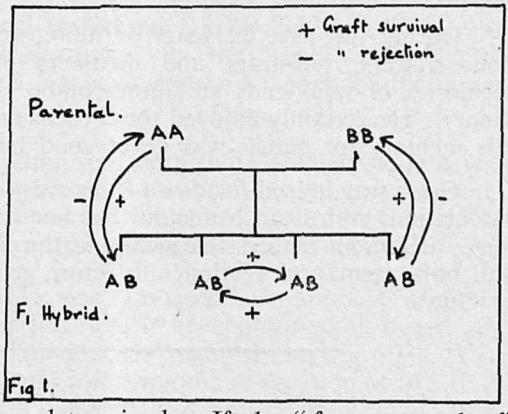
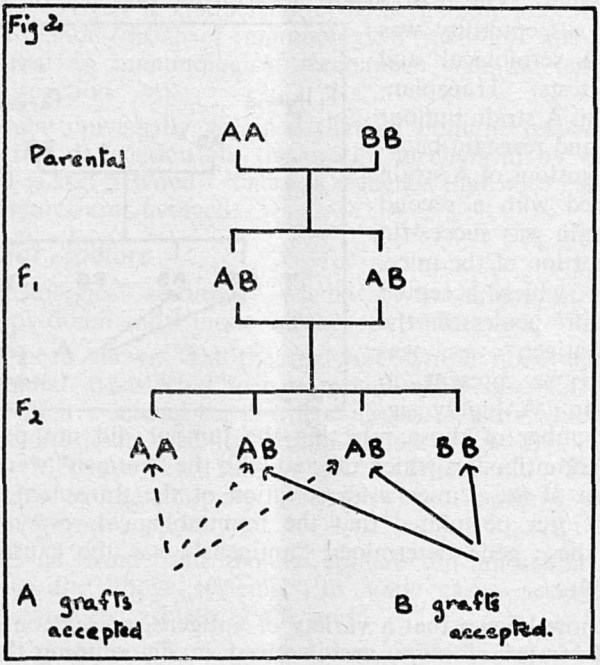


Fig 1.

tissue compatibility was impossible in the heterogeneous stocks of mice available. Little therefore started breeding strains of a high degree of genetic homogeneity. Further work on such inbred strains of mice confirmed his suggestions and equivalent principles have been shown to apply to normal tissue grafts.

Grafts exchanged between members of the same inbred strain survive whereas those between individuals of different strains are, with certain exceptions, rejected. The first generation offspring ($=F_1$ hybrid) between two inbred strains A and B will accept grafts from either parental strain and between each other. F_1 hybrid grafts, however, are rejected by both parents—as illustrated in Figure 1.
If a single gene-difference exists between strains A and B and this difference is sufficient to induce rejection of a transplant between the strains, then 3 out of 4 (3/4) of the second generation offspring ($=F_2$) will accept grafts from one of the parental strains. This is diagrammatically represented in Figure 2.



If the F_1 hybrid of strains A and B is mated with one of the parent strains, half of the offspring of this mating will accept grafts from the other parental strain.

By the same reasoning, if the strains differ by more than one genetic locus, then $(3/4)^n$ of the F_2 and $(1/2)^n$ of the backcross will accept parental grafts. **n** equals the number of independently segregating loci.

In this way, it has been estimated that differences in at least 15 genetic loci may determine the fate of skin transplanted between some inbred strains of mice. The genetic complexity of transplantation between two individuals, makes practical application extremely difficult.

Histocompatibility Systems

Although the geneticists had shown that it was necessary for a recipient to possess the same "factors" as those present in the donor if a graft was to be accepted, little was known about the mechanism of graft destruction.

It had been suggested that an immunological response was provoked by such tissue but at that time there was no evidence to substantiate this idea. However, in a series of experiments, the late Dr. Peter Gorer, of this hospital, confirmed this suggestion. He demonstrated the presence of certain antigens on both tumour and normal tissues. The relationship between the presence of these antigens and susceptibility was shown by serological and genetical tests. Transplantation of an A strain tumour to the F_2 and resistant backcross generations of A strain mice mated with a second inbred strain was successful in a proportion of the mice. All those which accepted the tumour possessed the same "antigen" as was known to be present in the tumour. A highly significant number of those rejecting the tumour did not possess this antigen and antibodies which reacted with the "antigen" were detected in the sera of these mice after rejection of the transplant. On this evidence Gorer postulated that the immunological response, stimulated by these gene determined "antigens" was the cause of graft destruction.

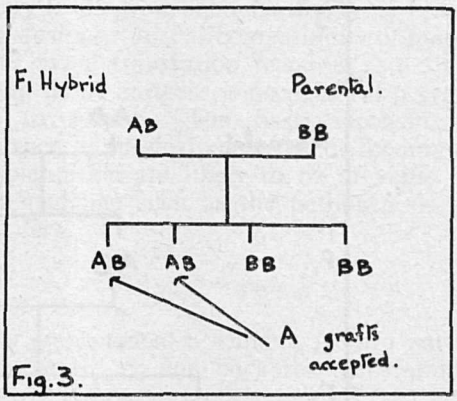


Fig. 3.

It is now known that a variety of antigens, present on the tissue of inbred strains of mice, are involved in determining the fate of grafts exchanged between members of different strains. These antigens are termed histocompatibility antigens and the genetic loci which determine their expression are known as histocompatibility loci or H-loci. There are a number of H-loci in the mouse of which 8 have been individually identified. Of these, the H-2 locus has been studied most extensively and appears to be the most potent in murine transplantation. It is a complex system governing a number of antigenic components which are present in different combinations on the tissues

of inbred strains of mice. The H-2 antigens have been shown to be present on the cell membrane by chemical and immunological techniques and this facilitates detection by serological techniques. Studies of other H-systems involve genetical methods but there is evidence that some non H-2 antigens are present on the cell membrane.

The Homograft Reaction

Gorer had demonstrated that an immunological response was elicited after transplantation between genetically different individuals but formal proof that destruction of the graft was a consequence of this was still lacking.

During the war, Medawar investigated the causes of skin graft destruction in rabbits and in mice in order to assess the possible application of skin grafting in cases of war injury.

Skin grafted from strain A to a member of strain B was rejected. If a second transplant of A skin was applied, the graft was destroyed more rapidly. He coined the term "second set response" for this accelerated rejection. The ability to respond more rapidly to a second challenge of antigen is characteristic of an immunological reaction. Medawar's demonstration of immunological 'memory' was final confirmation that an immunological mechanism was the basis of the homograft reaction.

It is now universally accepted that an immune response is the cause of graft destruction but the precise mechanism by which this is achieved is still debated. There is evidence that both cellular and humoral factors are involved.

(a) Cellular factors

1. The histological studies of Medawar on skin graft rejection showed a predominantly mononuclear cell infiltration.

2. It has been shown that the regional lymph node cells of an immune animal, transferred to a non-immune member of the same strain, can elicit a second set response against a graft which has the antigens as the tissue used for immunization. This applies to both skin grafts (Medawar) and tumour grafts (Mitchison). The experimental design of the adoptive immunity experiments is shown in Figure 4. (*See next page*).

3. Transfer of serum from immune animals did not confer adoptive immunity in the above systems. In some cases, serum transfer resulted in enhanced growth of the graft.

On this evidence they suggested that antibody played no part in graft destruction.

(b) Humoral factors

1. H-2 antibody has been shown to have a cytotoxic effect on both tumour and normal cells "in vitro". In this way it has been shown that different cells exhibit a spectrum of sensitivity to antibody. Hence it is to be expected that antibody will have a variety of effects "in vivo" in different graft-host combinations.

2. Passive immunization with antibody may inhibit the growth of tumour grafts "in vivo".

3. It has been shown that skin grafts may be destroyed by hyper-immune sera. (Stetson *et al*, Chutna *et al.*)

It is now acknowledged that a single mechanism is not responsible for graft rejection. Both cellular and humoral components of the immune response, together with many accessory factors, e.g., complement, participate in the homograft response. The predominance of either component is dependent on the type of graft employed and its sensitivity to antibody.

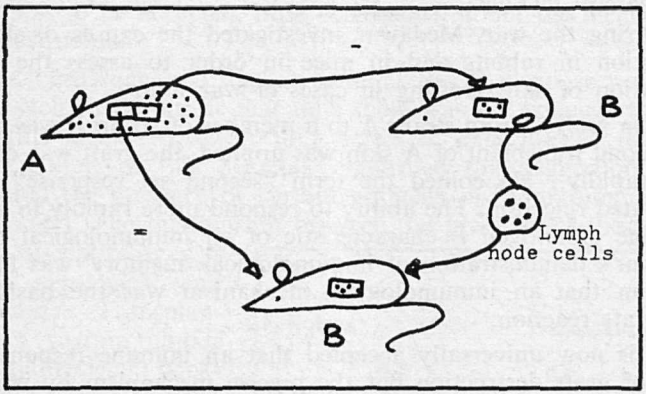


Figure 4

Enhancement

Under certain experimental conditions, prolonged survival or enhanced growth of a foreign graft may be seen. Enhancement of both normal and neoplastic tissues may be induced in the following ways:—

1. Active immunization with tissues of the same antigenic constitution as the subsequent test graft.

2. Passive immunization with antiserum directed against the antigens of the test graft.

Kaliss has shown that antibody is a necessary prerequisite for enhancement. The ease with which enhancement is achieved is inversely related to the susceptibility of a graft to humoral antibody; highly susceptible cells of a leukaemic graft exhibit enhancement less readily than cells of an antibody-resistant sarcoma. The experimental conditions are critical with regard to dosage of antigen or antibody employed, temporal relations between immunization and test graft, type of graft and strain combinations used. The experimental evidence indicates that antibody may prevent stimulation of the host response, by combination with the antigens of the test graft, or may interfere with the efficient rejection of the graft by sensitized cells.

Studies on enhancement of tumour grafts in experimental animals suggest that caution should be exercised in the use of anti-cancer sera as a therapeutic procedure.

Immunological Tolerance

This may be broadly defined as the inability of an animal to respond to a foreign antigenic stimulus as a result of previous exposure to that antigen. Tolerance may occur naturally or may be induced artificially.

Owen (1945) noted that the red blood cells of non-identical cattle twins were a mixture of two serological types. This state of red blood cell chimerism was assumed to be the result of blood exchange, via the placental vessels, in early embryonic life. This observation led Burnet and Fenner (1948) to postulate that the ability of an animal to distinguish "self" from "non-self" or foreign antigens was developed during early embryonic and post-natal life. They predicted that exposure of an animal to a foreign antigen at a sufficiently early age would result in tolerance or immunological non-reactivity to that antigen on rechallenge in adult life. Experimental support for this was soon obtained. Medawar showed that skin grafts exchanged between naturally tolerant cattle twins survived whereas a graft from a third individual was rejected.

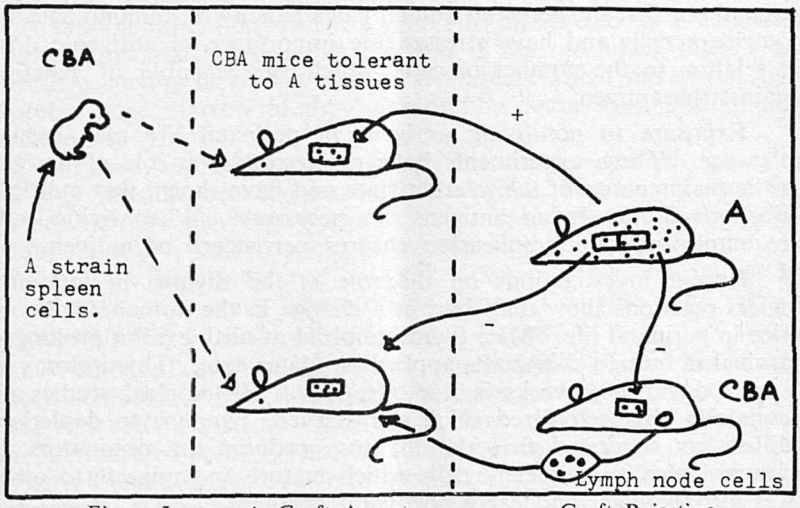


Figure 5. + Graft Acceptance. — Graft Rejection.

Artificial induction of the tolerant state was first demonstrated by Medawar *et al,* in 1953. They inoculated strain CBA embryos in utero with spleen cells from adults of strain A. At 8 weeks, the injected mice were grafted with A skin. Some grafts survived significantly longer than A skin transplants to untreated CBA recipients. The timing of the inoculation procedure was found to be critical. Cells administered within 24 hours of birth resulted in 100% tolerance, but the number of completely tolerant animals decreased rapidly if the inoculation of spleen cells was delayed. Treatment on the 7th day of post-natal life failed to elicit a response in their donor-host combinations. This non-reactivity was specific since skin grafts from a third unrelated strain were rejected by CBA hosts made

tolerant to A tissue. Their experimental design is illustrated in Figure 5.

The evidence of Billingham, Brent and Medawar suggested that tolerance induction in the neonate was a consequence of a *qualitative* difference of the immune response in neonatal and adult life. It was postulated that maturation of the immune response was incomplete until early post-natal life. Antigen administered before maturation was complete would be treated as "self" and would fail to elicit a response. It is now known that this is not so.

The idea that a *quantitative* difference of the neo-natal and adult immune response is the basis of tolerance induction has much support.

There is evidence that newborns of some species are not immunologically immature. Uhr has demonstrated delayed hypersensitivity reactions in the human infant. Howard and Michie have observed both immunity and tolerance in neonatal mice treated with foreign spleen cells. Very low doses of cells induced an immune response whereas large numbers resulted in tolerance. They have pointed out that the neonatal animal has a paucity of immunologically competent cells and have stressed the importance of antigenic dose in relation to the number of cells which are capable of reacting against the antigen.

Exposure to non-living antigens in perinatal life may induce tolerance. These experiments have emphasized the role of antigen in the maintenance of the tolerant state and have shown that multiple injections of non-living antigens are necessary. When living cells are employed, rapid replication ensures persistence of antigen.

Recent investigations on the role of the thymus in immunological reactions show that there is a change in the immune status of mice in perinatal life. Mice thymectomized at birth exhibit prolonged survival of foreign skin grafts applied at a later date. Thymectomy at 3 or 7 days, or 3 weeks is less effective. Histological studies on neonatally thymectomized mice show severe lymphocyte depletion. Miller has suggested that the thymus produces the originators of immunologically competent cells which mature and migrate to other sites during foetal and early post-natal life.

If the amount of antigen in relation to the number of immunogically competent cells is the basis on which immunity or tolerance are elicited, then tolerance in adults would be achieved by treatment with very large amounts of antigen.

Non-reactivity in the adults of many species has been achieved by treatment with large amounts of polysaccharides (Felton), proteins (Dixon) and some chemicals (Chase). The underlying mechanism of tolerance in newborns and adults is now thought to be basically identical.

Adult non-reactivity to all foreign antigens may also be achieved by experimental procedures which destroy the immunologically competent cells, e.g., X-irradiation, or which inhibit their replication.

Drugs which are the antagonists or competitive inhibitors of intermediary steps in nucleoprotein or protein synthesis act in this way. These methods are non-specific and, when employed to depress the immune response of the potential recipient of a foreign transplant, introduce the additional risk of infection.

Graft versus Host reactions

During studies on immunological tolerance in mice, Billingham *et al*, noticed that some of the recipients of adult foreign cells developed a syndrome which was frequently fatal. This Runting syndrome was characterized by stunted growth, diarrhoea, and at autopsy, striking hypoplasia of the lymphoid tissue was found.

Simonsen (1957) observed that chick embryos, inoculated with adult spleen or leucocytes 3 days prior to hatching, had an enlarged spleen and symptoms of severe haemolytic anaemia which terminated in death during the first or second week after hatching. He postulated that this, and runting observed in mice, was a consequence of an immunological reaction of the grafted cells against the host tissues. This was supported by the demonstration that immunologically incompetent cells failed to elicit runting.

Another situation which is generally interpreted as a manifestation of the graft versus host reaction is the secondary disease and death occurring in heavily irradiated animals which have been given foreign bone marrow to prevent radiation death from haemopoietic failure.

In man, successful exchange of tissues under normal conditions, is only possible between monozygotic twins. Hence any procedure which favours survival of foreign tissue has wide potential applications. Little is known about histocompatibility systems in man, but research on the detection of antigenic differences between individuals is in progress in many laboratories. This will enable more rigorous cross-matching of potential donors and recipients.

Prolonged survival of foreign haemopoietic tissue has not yet been achieved in man, hence the risk of a graft versus host reaction has not been assessed. Graft versus host reactions are not elicited in X-irradiated animals restored with foetal cells. Some animals have been observed to recover from secondary disease and remain stable chimeras. These observations are encouraging for the future of organ replacement therapy.

AMOS, D. B. (1959). Some iso-antigenic systems of the mouse. *Proc. of the 3rd Canadian Cancer Conference*. 241-258.

AMOS, D. B. (1962). The use of simplified systems as an aid to interpretation of mechanisms of graft rejection. *Progress in Allergy*, **VI**, 468-572.

BILLINGHAM, R. E. and BRENT, L. (1959). Induction of tolerance in newborn mice and studies on the phenomenon of runt disease. *Phil. Trans. Roy. Soc. Series B. No.* 694, **242**, 439-477.

GORER, P. A. and MIKULSKA, Z. B. (1959). Some further data on the H-2 system of antigens. *Proc. Roy. Soc., Series B.* **151**, 57-69.

MILLER, J. F. A. P. (1962). Role of thymus in transplantation tolerance and immunity. *Ciba Foundation Symposium on Transplantation*, 384-397.

SIMONSEN, M. (1962). Graft versus Host reactions. *Progress in Allergy*, **VI**, 349-467.

For current views on the rôle of the thymus, readers should refer to:—

MILLER, J. F. A. P. (1963). Role of the Thymus in Immunity. *B.M.J.* August 24th. pp. 459-464.

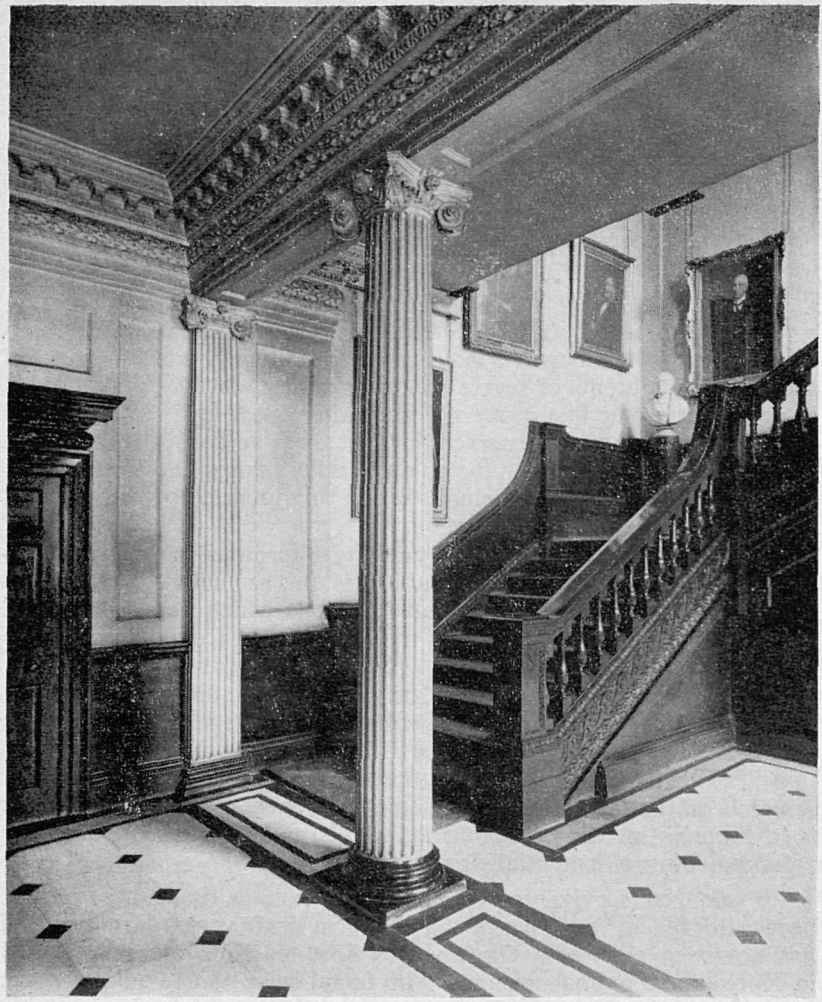


Figure 1

DID YOU KNOW THESE MEN?

Four of the photographs on the opposite page are of busts of past members of Guy's which were rescued from the original East wing before it was gutted by fire in 1941. *Figure* 5 is a picture of the latter shortly after it was burned out. As a result of the ravages of war the identity of these men is now in some doubt, and those directing the reconstruction of this part of the hospital would be grateful for any helpful information. *Figure* 1 above shows the original staircase with a similar bust at its first corner—probably identical with that represented in *Figure* 6 and believed to be of W. HUNT. The quotation underneath the bust depicted in *Figure* 4 is from "*Crossing the Bar*" by Alfred, Lord Tennyson.

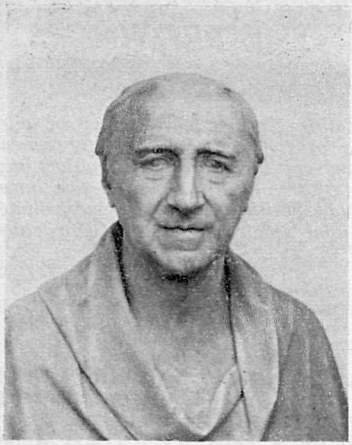


Figure 2

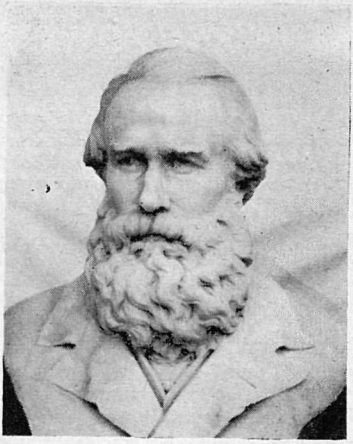


Figure 3

Figure 4

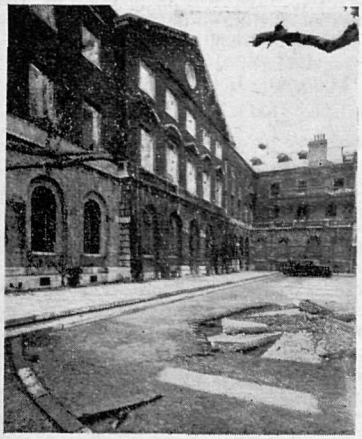


Figure 5

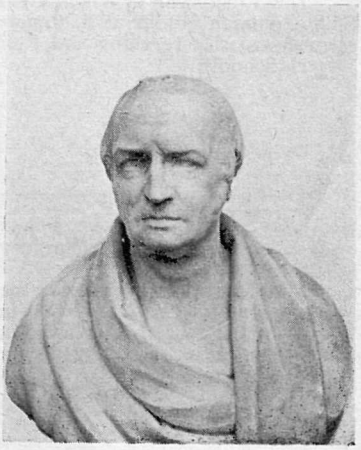


Figure 6

NEWS OF GUY'S MEN IN THE PROVINCES AND ABROAD

In Passim *of 4th May and 1st June of this year we gave notice of our intention to start a column containing news of the activities of Guy's men farther afield. The response to this appeal and the income of information has been insufficient to provide a regular feature of this kind. However, we have received a detailed report of recent events in New South Wales which we include below. Should further news letters of this kind reach us, we will endeavour to publish their content from time to time.*

EDITORS

New South Wales

A reunion of Guy's men and women now in New South Wales was held at Casey Cottage, Hunter's Hill, Sydney, in May. The following were present (year of qualification or post-graduate appointment at Guy's in brackets): George Schiller (1948), Maurice Levene (1951), Mick Stoner (1951), Bob Webb (1951), Harold Duke (1952), Phillip Greenberg (1952), Peter Cook (1953), John Boger (1955), Tony Orsmond (1955), Colin Wendell-Smith (1956), and George Preswick (1954). Others unable to attend were: Roger Rankine (1909), F. Tooth (1914), T. G. Humby (1935), Michael Blunt (1944), Peter Bryant (1944), Douglas Keller (1951), Derrick Dodshon (1953), Graham Fisk (1960), and Doreen McCaffrey (née Birch) (1960).

Another reunion is planned for next year. Any Guy's men or women who will be going to New South Wales are invited to write to those already there *via* Mr. Goodliffe, at the Appointments Bureau, Guy's Hospital.

NOTICES

Guy's Science Club

The first meeting of the new session of the Guy's Science Club will be held on Wednesday, 9th October, at 4.45 p.m. in the Staff Common Room. Dr. W. J. Whelan of the Lister Institute of Preventive Medicine, will speak on:—

"New Aspects of the Metabolism of Glycogen".

The Chair will be taken by Dr. B. McArdle. Tea will be served in the Staff Common Room at 4.30 p.m., and a cordial invitation is extended to all members of the Teaching and Research Staffs of the Hospital and Medical and Dental Schools.

MARJORIE J. HILL, *Hon. Secretary.*

Arts Society's Annual Exhibition

The Annual Exhibition of the Art Society will open on October 28th and will continue for two weeks. As in former years, paintings and drawings, pottery and sculpture, wood carvings and metalwork will be accepted from anyone working at or connected with the hospital. Details about sending in exhibits will be announced later.

J. S. TOMKINSON,
Chairman, Guy's Hospital Art Society.

REVIEWS

THE INSTRUMENTS OF SURGERY.

by F. S. Mitchell-Heggs and H. Guy Radcliffe Drew. Heinemann, 1963. Pp. 509, Illustrations, 1134. *Price* 105s.

The modern surgeon is expected to have a reasonable knowledge of biochemistry and physiology; he should be aware of the potential value of electronics and statistics and his orbit may include elemental radioactivity. But first he must be able to use the tools of his craft. The publication of this book is a reminder that manual dexterity and ability to handle instruments is the final factor on which the outcome of surgical illness may depend.

The book is designed primarily for those in charge of instruments and apparatus in hospitals. It is well produced and profusely illustrated. A number of chapters appear to suffer from over-zealous attempts to depict everything pictorially—the first thirteen pages contain forty-two figures showing eighty-six different knives. In a catalogue of instruments it would be reasonable to depict the actual size of needles, but in a textbook, it seems hardly necessary to produce a drawing showing every size of half-circle triangular needles from No. 1 to No. 20. It should be possible to make a drastic reduction in the number of illustrations in this book without affecting the value of its content.

The preparation of the text has obviously involved much painstaking research and has resulted in a volume bulging with history—Egyptian scapels, Roman amputation knives, and a whole set of instruments for lateral lithotomy. This aspect of the text contains so much of interest that on these grounds alone I can unhesitatingly commend the book to the notice of all those who have an interest in surgical instruments. The historical perspective is emphasised to such an extent that one feels the authors could make a magnificent contribution on the history of surgical instruments.

However, if as the authors claim, this book is intended for reference, it lacks modernity. The instruments depicted are simple hand tools and the feeling that it has failed to keep pace with advances in surgical technology becomes inescapable when it is found that there is no reference to diathermy machines, heart-lung pumps, dialysis equipment or mechanical respirators. These are standard pieces of equipment and complex, though they may be and are of greater importance to the surgical armamentum than much of the out-of-date equipment described at length in the text. In the next edition the author must either go backwards and make this book an historical treatise or forward to up-to-date descriptions confined to instruments in current use. At present the compromise he has chosen makes good reading, but is of limited use.

No-one can fail to enjoy this book, and for those with a feeling for surgical instruments it will provide many hours of pleasure. The authors have produced the most comprehensive book yet published on the subject and have pursued their task with admirable zeal.

F. G. Ellis.

A NEW WAY WITH OLD LEG ULCERS.

by Stanley Rivlin. Pitman Medical. 1963. Pp. 37. *Price* 10s. 6d.

This short book was compiled mainly for the use of district nurses, but it is also of value, as a reference book, to all grades of hospital nurses.

It deals very clearly and in detail, with all types of leg ulcers and their treatments and the phraseology is simple and concise. The section dealing with bandaging of the legs is especially good and very well illustrated. In the matter of wording, I would recommend this book to all patients suffering from leg ulcers, to enable them to understand fully their causes, and the reasons for their treatment and various exercises. Each chapter is liberally illustrated with very clear diagrams.

In summarising, I cannot do better than to quote the author. He hopes that the book will be ' readable, instructive, interesting and comprehensive". It is!

V. N. Taylor.

SPORT

RUGBY

With the belated arrival of summer, the XV took the field against customary opening opponents, Catford Bridge. The effects of prolonged team training were ably demonstrated by the outsides with a fast and skilful display of handling, sometimes let down by the last pass. The forwards fared well in the tight, but winning the ball in the line-out was not always an advantage, and the loose play was not always effective.

This is a difficult match on which to assess prospects, as defensive play is usually at a premium. However, the spirit and stamina displayed in this match augers well for the future. A review by last year's captain appears below.

At the request of the Rugby Union, the home match on Saturday against Blackheath will be used to practice law amendments suggested by the International Board. The alterations suggested are: Law 27: When a scrummage is awarded following a line-out, it shall take place 15 yards from the touch line. . .

Laws 15, 18 and 27:—No player of the team losing possession of the ball in scrammage or line-out who is not part of the same . . . , may be nearer than ten yards from the line of scrummage or line-out before the ball comes out of the scrum or line-out ends.

This latter suggestion has been made by one of the club's vice-presidents, Dr. Danie Craven, and both amendments will be viewed with interest by players, spectators and an official observer from the union.

ASSOCIATION FOOTBALL

The Soccer club opened their season on Thursday, 19th September, with a strong new fixture against the Bank of England at Roehampton.

This opening is an indication of the Club's awareness of the necessity to play fixtures commensurate with their real strength. The new captain, P. D. Davies, is very conscious of the talent at his disposal—with all last year's 1st XI available, ten of whom have won representative honours with United Hospitals. He is also conscious of inheriting a team with an outstanding record—only three matches lost last season—but which, critically, still did not make its mark on the University and United Hospital Cup Competitions. He looks forward to having greater success in the Cup Competitions, which have eluded the Club in recent years, while maintaining the general standard of play.

Other additions to the fixture list include matches against strong University sides, including Reading and Birmingham and the best London Colleges, including University and King's. The Cup draw has provided difficult first hurdles—The London, last season's Hospital Cup winner, in the University Cup; and St. Mary's in the U.H. Cup.

The second XI, outstanding winners of last year's Junior University Cup, will again be captained by K. Hughes. Fixtures have been difficult to arrange, as some members proved apathetic last season, but the club look forward to a crop of new freshers to introduce a competitive spirit.

The club is naturally disappointed that their relationship with the Dutch club, Tout Venant, from Maastricht, has had to be discontinued for financial reasons. Socially and competitively, this has proved a profitable relationship, and finding opponents of a similar nature will be difficult.

On Saturday last, P. D. Davies was efficiently conducting the club through a strenuous training session. The emphasis he puts on ball control and a good positional sense as well as fitness, should enable him to reap the fruits of his efforts by the end of the season—those Cups should be within the grasp of the Club.

BOAT CLUB

During the summer term the Boat Club entered a Maiden IV for three Regattas. The first was at Peterborough on the 22nd of July. The crew, who had only been together for a fortnight, rowed over in the first round since their opponents from Norwich failed to arrive in time. In the second round they lost a well-fought race to a crew from the City of Birmingham Training College.

On July 10th the crew entered the Barnes and Mortlake Regatta. In the first round they were drawn against Furnival and a crew from Westminster Bank. Rowing well, they beat Furnival by one length, but they were not quite able to catch the fitter Westminster crew.

The crew for the first two Regattas was:—

Bow: J. Williams; 2: P. Sharp (Captain); 3: P. Burton; 4: R. Forrest; Cox: N. Daws.

Unfortunately, J. Williams went on holiday after the second Regatta, and the crew changed round, with M. Preece stroking the boat.

The last Regatta was at Staines on 27th July. Since there was no maiden event, the crew rowed as Juniors. A bye enabled them to reach the second round, where they were drawn to row against a crew posing as Twickenham "B". Guy's went into the lead at the start, and after about a minute the crews were level. Unfortunately a pleasure boat sailing up the river passed within only a few feet of the Guy's boat and the wash broke over stroke's head. (It is to be recorded that stroke continued rowing even though temporarily submerged). The other crew was shielded from this wash since they were on the other side of the river. Guy's never properly recovered from this and lost by four lengths.

The crew for the Staines Regatta was:—

Bow: P. Sharp (Captain); 2: R. Forrest; 3: P. Burton; 4: M. Preece: Cox: N. Daws.

LAWN TENNIS

Congratulations to the club who in the final of the Inter-Hospitals Cup, played against Bart's at their ground. Guy's won by 6—0, the remaining matches being unfinished because of rain. The match was not so overwhelming as the score suggests, many of the rubbers running to three sets. The comparative equality of the three Guy's pairs was the decisive factor.

DETAILS:—

D. Richmond and C. Newman beat 1st pair 2—6, 6—4; beat 3rd pair 6—0, 5—7, 6—4.

P. Dickinson and J. Boyd beat 1st pair 1—6, 6—4, 6—1; beat 2nd pair 6—4, 6—3.

H. Sharp and J. Cook beat 2nd pair 6—3, 6—1; beat 3rd pair 6—4, 6—0.

Reports and Results

RUGBY

GUY'S v. CATFORD BRIDGE

At H.O.P. September 14th, 1963.

Result: won 17—6.

A fine, warm afternoon and the opening of a new Rugby season—the 120th in the Guy's history—brought a large crowd to H.O.P. for the traditional pipe-opener with Catford Bridge. If we are to be served the same rugby throughout the season, Guy's can be sure of having a large crowd every Saturday—even when the colder winds of December and January blow, for we were treated to a fine exhibition of attacking rugby with the ball travelling from one side of the field to the other and occasionally seeing handling movements of the highest quality.

Baker, in the process of building a winning side, produced an interesting combination for this first game. The team is not without experience for only Allen, playing in the centre, was making his first appearance for the 1st XV, but in spite of this fact the team created the impression of being a fresh, eager and very fit side.

Myall, at full back, had an excellent game both in attack and defence, kicking a good length and joining the line several times to great advantage.

The three-quarter line ran and handled the ball exceptionally well for so early in the season. Possibly in attack, the line itself was a little shallow and the deep echelon formation was not used. Edgar, in the centre, has become a really polished and mature player. His succession of breaks, half-breaks and

neatly placed kicks were a delight, particularly one grub kick in the first half that so nearly produced a try. Outside him, Biggs showed that he is still full of points. On two occasions he received an inside pass from his fly-half and each resulted in a score. These two experienced players gave confidence to the two younger players, Allen, whose handling was good and clearly knows how to take the ball on the burst, and Fleming-Jones, who grabbed two tries and showed great determination, always with an eye for a pass back inside

The halves, MacGregor and Thomas, got the line going well, though they have not yet found a complete understanding. Thomas seemed to be over-running the ball and took it too close to the advantage line—possibly because he moved too soon. MacGregor's defensive kicking down the line was excellent, as was Thomas' in attack.

The front row of the scrummage, unchanged from last season seemed compact in the tight and transmitted the shove well. Price, the hooker, took some time to master Blunden, the Catford Bridge captain, a wily old bird in the witchcraft world of hooking, but ended the game by taking three tight heads in succession—one leading to a try. Davies and Fisher, the props, had their moments, though possibly they could capitalize even more upon the shortcomings of their opponents.

The second row, Peace and Hartley, looked comfortable in the tight, and although it is difficult to assess, seemed to be providing a fair amount of push. Their line-out work was a strange mixture—the jumping and catching was really first rate, both getting their feet well off the ground, but their subsequent distribution to MacGregor was a little hurried. Hartley in particular turned at the top of his jump and threw down to his scrum-half—an admirable method if the blocking is really tight—but as this was not the case, it might have been better to bring the ball down first and concentrate on an accurate return. Both moved well around the field and supported the back-row well.

The back-row had a good game, all three backing up well and switching the attack on several occasions. Brown covered deeply, fell and rucked very well. He was unlucky to be caught off-side around the base of the scrum a few times early on, and that caused him to check subsequently. Hendrick, too, had a good game—line-out work and covering well, scoring a good try in the second half.

Baker, the open side wing forward and captain, had an excellent game and went off at a cracking pace that set a good example to the rest of the side. His backing up at all times was first class—he seemed to cover miles during the afternoon.

Of the result itself, it can be fairly said that Guy's were worth more than the 17 points they scored. On five or six occasions the final pass of a movement broke down, preventing a try.

The first score of the game came after eight minutes when Nelson dropped a good goal for Catford Bridge following a short penalty on the Guy's twenty-five, but this was equalised after 20 minutes by a fine penalty goal by Edgar from 35 yards. Up to this stage the game had been fairly even, then Guy's ran and threw the ball about in a manner that both exhausted and bewildered the opposition, and delighted the crowd.

In the second half, Guy's took full command. Fleming-Jones scored a try after the whole of the back division had handled the ball following a break by Biggs, who also converted the try. Nelson kicked a penalty goal for Catford Bridge, but this was soon followed by Hendrick's try wide out following a run by Fisher. Biggs missed the conversion, as he did of another try by Fleming-Jones. Finally, after more delightful rugby, Edgar scored from a pass by Baker; Biggs missed the kick, and Guy's had won their first match in no uncertain way.

D. R. A. LLOYD-EDWARDS

Team: R. Myall; D. Biggs, J. Edgar, A. Allen, D. Fleming-Jones; J. C. Thomas, H. MacGregor; J. Davies, E. Price, A. Fisher, R. Peace, D. Hartley, R. Brown, D. Hendrick, I. Baker.

A XV v. CATFORD BRIDGE

Result: won 22—6

CRICKET 1963—IN RETROSPECT

A club's success cannot be evaluated by its wins and losses, but by the enjoyment derived by its members from playing the game in question. Too much stress is placed on winning, or not losing cricket matches, instead of all twenty-two players obtaining some satisfaction in having participated in the game.

The Guy's XI over the past four or five years has earned a reputation as one of the stronger South London Clubs. Consequently the wandering sides encountered in the earlier part of the season were suitably bolstered with 'guest' players. This made for very good cricket, but not an impressive record. It must be pointed out that throughout the season a number of the Hospital's more seasoned players found it difficult 'to be available'; but what the team lacked in experience was offset by the abounding enthusiasm of the young players.

Appleby, Crafts and Silk all showed a degree of talent and team spirit which will help the Club in the future. Miller also performed very well on the few occasions he could be enticed from the 'greens'. Unfortunately, only two of these players were available for the cup game, due to holiday 'employment'.

The cup was lost for the first time for four years, even though on paper the side seemed as strong as previous seasons. The dismal collapse of the recognised batsman cannot be easily explained, although they all seemed to enter the fray far too timidly. The men of the match were Knott, Walter, Norman and Davoodbuoy, whose performances reflected their true value to the club throughout the season.

The 2nd XI, playing cavalier cricket under Reekie's admirable leadership, gave well on all occasions. Appleby, Carruthers, Healey and Trevelyan were the mainstays of the team, and between them did much to guide the XI to the final of the junior cup (still pending).

The season ended with the annual tour of the South Coast and success varied as a direct proportion to the blood's alcohol—the last game at Cuckfield resembling a walk over.

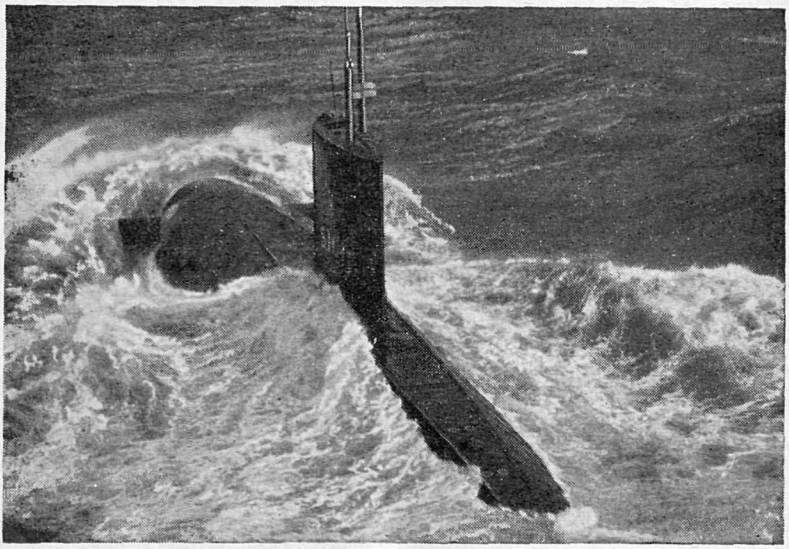
I should like to offer my thanks for the support received from club members, and especially to the hard worked officers who ran me so efficiently throughout the season.

Just for the record—

Played 29, Won 16, Lost 7, Drawn 6.

BOB MYALL, Captain, 1963.

The go-ahead OPPORTUNITY that is ROYAL NAVY



you find it as a MEDICAL OFFICER

As a Medical Officer, you have complete clinical freedom and a widely varied medical experience. Your practice is among 100,000 Naval men and women. Ashore or afloat, it can take you anywhere in the world from Malta to Singapore: and, when you have a shore appointment abroad, your family can be with you. Go-ahead, too, is your opportunity to specialize: not only in traditional categories, but in the modern sciences of aviation and nuclear medicine.

As a Medical Officer, your pay, allowances, and gratuity—or permanent commission pension—are very good: for example, your initial pay is considerably higher than that of a civilian hospital registrar.

You can enter by one of three ways: as a Registered Medical Practitioner—your civilian experience back-dating seniority—or as a qualified doctor doing your pre-registration year, or as a student with a 2nd M.B. For qualified women doctors, there is a special short service commission.

For fullest details of your Royal Navy life as a Medical Officer, write, mentioning your own qualifications and age to: The Medical Director-General of the Navy, Medical Department (GO/6) The Admiralty, Empress State Building, London, S.W.6.

MO.2D

HOSPITAL INFORMATION

APPOINTMENTS VACANT

GUY'S HOSPITAL

Applications are invited for the appointment of **Registrar in the Dental Department for Children,** with attendance on 6 sessions per week and duties to commence as soon as possible. Forms of application are obtainable from, and should be lodged with, the Superintendent, Guy's Hospital, London, S.E.1., not later than **Saturday, 12th October, 1963.**

GUY'S HOSPITAL

Applications are invited for the appointment of **Registrar in the Department of Dental Prosthetics,** to attend on 5 sessions per week with duties commencing as soon as possible. Forms of application are obtainable from, and should be lodged with, the Superintendent, Guy's Hospital, London, S.E.1., not later than **Wednesday, 2nd October, 1963.**

GUY'S HOSPITAL

Guy's Hospital, S.E.1., announce a ten month course for Female Dental Hygienists, commencing April, 1964. Candidates must be at least 17 years of age and should possess a minimum of 4 G.C.E. 'O' Level subjects. Application forms, from the Department of Preventive Dentistry, must be submitted by October 19th. 1963

APPOINTMENTS

UNIVERSITY OF LONDON

Appointment of Examiners for 1964

J. Joseph (Anatomy B.Sc. Special).
C. B. Allsopp, E. H. Grant (Veterinary Preclinical Part 1—Physics).
G. A. D. Haslewood (2nd M.B. Physiology and Biochemistry).
R. Warwick (2nd B.D.S. Anatomy, general).
D. J. Anderson (2nd B.D.S. Physiology).
D. J. Neill, R. D. Emslie, W. E. Herbert, J. W. Mansie, W. J. Tulley (3rd B.D.S.).
F. H. Brain, G. Stead (1st M.B.).

ALLOCATION OF MEDICAL AND SURGICAL REGISTRARS

1963/64

To take effect as from October 1st, 1963.

Medical Registrars

Dr. Mann and Dr. Scott	Dr. D. A. Lillicrap
Dr. Baker and Dr. Houston	Dr. G. M. Davies
Dr. Hardwick and Dr. MacLean	Dr. I. D. B. Rennie
Dr. Kauntze and Dr. Joiner	Dr. J. R. R. Spurrell

Junior Medical Registrars

Dr. Mann and Dr. Scott	Dr. C. Dare
Dr. Baker and Dr. Houston	Dr. T. C. Northfield
Dr. Hardwick and Dr. MacLean	
Dr. Kautze and Dr. Joiner	Dr. P. J. Winter

Surgical Registrars

Mr. Eckhoff and Mr. Glover	Mr. I. McColl
Professor Atkins and Mr. Lawrie	Mr. S. A. R. Cooke
Mr. Wass and Mr. Brain	Mr. J. C. Gazet
Mr. Blackburn and Mr. Beard	Mr. J. N. Gibson

Medical Registrars and Junior Registrars with *duties in* special departments

Cardiac Clinics

Dr. Baker	Dr. G. M. Davies
	Dr. T. C. Northfield
Dr. Kauntze	Dr. J. R. R. Spurrell
	Dr. P. J. Winter

Endocrine Clinic

Dr. M. H. Lessof

Chest Clinic

Dr. D. A. Lillicrap

Asthma Clinic

Dr. G. M. Davies Dr. C. Dare

Diabetic Clinic

Dr. D. A. Lillicrap Dr. I. D. B. Rennie

Dr. Joiner's Clinic (Monday)

Dr. P. J. Winter Dr. T. C. Northfield

Nurses' Monday Clinic

Dr. C. Dare

PERSONAL

Special rates for Guy's Staff, Students, Nurses and Subscribers to the Gazette. 5 words 10s. 6d. 15 words 21s. 0d. Box Numbers 1s. extra.

Ordinary rates 15s. 0d. 5 words. Box Numbers 1s. extra.

Guy's man requires responsible assistant in prosperous market town. Excellent recreational facilities. Fully equipped dental surgery—full clinical freedom, etc. Remuneration on percentage basis. Box No. 344.

BIRTHS

McCOLL.—On the 19th August, 1963, at Guy's Hospital, to Jean (née McNair) and Ian McColl, a daughter, Caroline Lennox, a sister for Alastair.

McLELLAN.—To Pauline and Iain C. McLellan, M.A., M.B., B.Chir., a son, on August 26th, at Nuffield House, Guy's Hospital.

TAYLOR.—To Patricia (née Glenday) and Brian Taylor, a daughter, Philippa Susan, on 3rd September, 1963.

MARRIAGES

HARLAND—KRUEGER.—On 21st August, 1963, at Nairobi, Kenya, P. S. E. G. Harland, L.R.C.P., M.R.C.S., M.B., B.Ch., to Ruth Krueger, M.B., Ch.B.

SCHWEITZER—BULL.—On June 7th, at Southwark Cathedral, Frank A. W. Schweitzer, M.B., B.S., to Wendy Bull, S.R.N.

GUY'S HOSPITAL GAZETTE

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Editors *W. G. Reeves*
T. C. Davis

Sports Correspondent *E. Tiller*

Guy's Hospital, London

PASSIM

"Reading maketh a Full Man; Conference a Ready Man; and Writing an Exact Man. And therefore, if a Man write little, he had need have a Great Memory; if he Conferre little, he had need have a Present Wit; and if he Reade little, he had need have much Cunning, to seem to know that, he doth not."

FRANCIS BACON, *Essayes.*

As we welcome those who are entering Guy's for the first time, it may be of value to discuss some of the opportunities which are available to the aspiring leech at his teaching hospital. Whether they be strictly medical, dental or other interests, it will soon be obvious that the chief difficulty will resolve into one of time and its shortage. This situation is only made more acute as one passes on towards qualification and we would urge those entering the earlier years of the course to explore all the possibilities available, while time permits. The commonest pre-occupation in the minds of those anticipating several years of undergraduate life, will be concerned with acquiring the know how to navigate the bewildering succession of examinations which lies ahead.

It will soon be apparent to the newcomer that sources of information are plentiful enough and while the nature of the curriculum is continually open to, and under, discussion, its improvement is chiefly a problem of reshuffling and dovetailing the various demands upon it. Certainly there is no dearth of reading matter available. Guy's itself must be well in the lead in its output of text-books alone, especially in clinical medicine (practically the only subjects unrepresented being dermatology and bacteriology and we believe that these fields could be exploited with a considerable measure of success).

By dilligent study the majority will obtain sufficient ammunition to fox their inquisitors. But this alone is not a university education. Such a course must provide this in the context of a wider experience. And it is within this Baconian "conference" that one may acquire the greatest benefit from a university atmosphere, be it in the form of a tutorial or debate, ward-round or society meeting, attendance or participation in a theatre club production or Saturday afternoon sport. The pattern formed by the non-medical societies of the hospital is a changing kaleidoscope which reflects fairly closely the interests and aspirations of its student population at a particular period of time. In recent years these have not been without imagination, and a glance at the Clubs' Union handbook will give an idea of the scope already available.

But it is not always realised what merit there is in becoming involved at an early stage before time is at a much higher premium and examinations take priority. Any apparent apathy is created more

through indolence than sheer disinterest—one aggravating factor being that the very large majority (more than 90 per cent) of the students at Guy's, are non-resident and commute from homes or lodgings. Thus it is very easy to return for the evening meal without any experience of some of the evening societies or meetings which may be found to be worth staying for. To this end we publish on page 501 of this issue an abbreviated programme of some of the events taking place during the coming term, and we commend them to your experimentation.

In his essay "On the Advancement of Learning", Bacon included a third and complementary occupation: that of writing. Whether to become exact or not we would inform all those who may be interested, that the editors of the *Gazette* are always keen to receive contributions from students and staff alike, as well as others outside Guy's. Particularly, we welcome anyone to contribute to the correspondence column who may wish to voice an opinion on matters of general interest.

But in whatever direction you may be persuaded to "stand and stare", we feel confident that it will be time gained rather than lost to the insatiable appetite of your subsequent examiners.

GUY'S DIARY

OCTOBER

EXHIBITION. *"Burns".*

8th	T.	1.00	Mr. ECKHOFF. Clinical Lecture. *Tumours of the Skin.*
10th	Th.	1.00	Dr. HARDWICK. Clinical Lecture. *Diabetic Neuropathy.*
11th	F.	1.00	Mr. BRAIN. Clinical Lecture. *Associated Pulmonary Oesophageal Disease.*
12th	S.	10.00	Departmental Round conducted by Mr. ROSS. Clinical Theatre.
15th	T.	1.00	Mr. Blackburn. Clinical Lecture. *Carcinoma of the Colon.*
17th	Th.	5.00	*Neursurgical Round* conducted by Mr. SCHURR. Clinical Theatre.
18th	F.	1.00	Dr. MacLEAN. Clinical Lecture.
22nd	T.	1.00	Professor ATKINS. Clinical Lecture.
24th	Th.	1.00	Professor POLANI. Clinical Lecture. *Medical Palmistry.*
25th	F.	1.00	Dr. KAUNTZE. Clinical Lecture. *Peptic Ulceration.*
28th	M.	1.00	Dr. BAKER. Clinical Lecture.

We offer our congratulations to Dr. M. H. Lessof on his appointment as preclinical tutor as from October, 1963.

Current Virology

by R. H. GORRILL

Department of Bacteriology

In recent years virology has expanded so much that it is difficult to keep in touch with the whole field. This article is an attempt by an onlooker to survey the present position. Basic virology is tackled first with descriptions of virus structure, cell invasion, virus replication and release. The problem of the control of infection is considered under the headings of interference, interferon, chemotherapy and immunisation. A review of clinical virology follows and is completed by a discussion of the part played by viruses in neoplasia.

Viruses are at the centre of a number of important biological problems. In the field of medicine they are the main cause of infections which resist chemotherapy and it is possible that they are implicated in the aetiology of malignant disease. Scientifically they are of interest because of the opportunities they present for the study of nucleic acids which are so important in the biological control of heredity and cell metabolism.

It is not easy to define a virus but for the purposes of this article I propose a simple dogmatic description. They are small particles consisting of a central core of nucleic acid, either RNA or DNA, intimately related to a protein coat. Some viruses have a further outer envelope. They possess either few or no enzymes systems and so are not self-replicating in the free state. In order to multiply they take over the metabolic processes of the host cell. Once a susceptible cell is entered it becomes converted into a virus-cell complex. The nucleic acid fraction organizes the cell to produce both nucleic acid and protein of the next generation of virus particles. Towards the end of the cycle the two parts are fitted together and the cell fills with infectious virus particles. In all virus infections the important unit is the infected cell which in effect becomes a new organization, neither virus nor cell but a union of the two. Viruses are found to be parasitic on all forms of living cells from bacteria upwards but in all cases the processes of replication are the same.

The Structure of the Virus Particle

Unlike bacteria viruses exist in two forms. The stage with which we are familiar, through electron micrographs, is the free living form which is biologically inactive. It functions as a mechanism for transporting infectious nucleic acids from one cell to another with the least loss in the process. Figure 1 shows the two ways in which the protein and nucleic acid fractions are joined together. In the first form (Type I) which is common in human viruses and bacteriophages,

the nucleic acid which is arranged in a spiral, lies inside a protein coat. In some bacteriophages this outer coat is more complex in shape with a head and tail clearly developed. The phage particle attaches by the tail and the nucleic acid is forced from the head through the tail into the susceptible cell. As the virus particle is assembled inside the host cell it may pick up an outer layer of host lipid or protein. While this confuses the antigenic pattern it does not affect the essential structure of the virus. Influenza virus is often affected in this way.

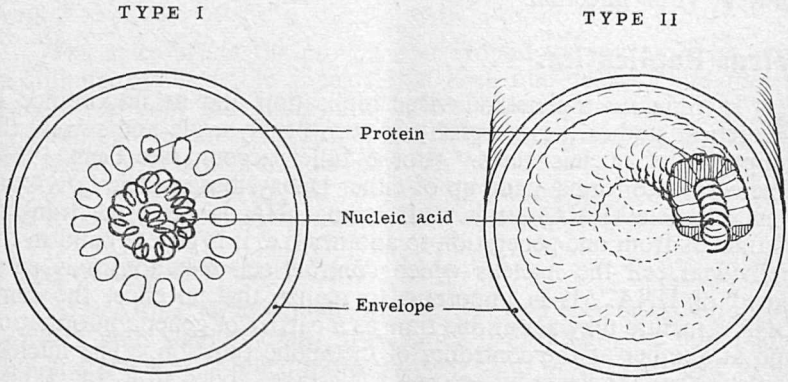


Figure 1. A diagram showing a cross section of the two types of virus particle.

The second form is seen in plant viruses and here the spiral of nucleic acids is a thread on which are strung the covering protein molecules (Type II, Figure 1). In both forms the nucleic acid is protected by protein although the arrangement is quite different. There are a great many theories about the way in which these shapes come about and anyone interested should read the articles in the Cold Spring Harbor Symposium 1962.

Virus Attachment

In order that viruses may survive as organisms it is essential that they are able to recognize susceptible cells. Otherwise the great majority would be lost in the sense that they could not initiate another round of replication. In the case of phage it appears that the chemical groupings at the tip of the tail are attracted to certain antigenic groupings on the cell wall. Once they are brought in contact the virus orientates vertically to the bacterium and the nucleic acid is injected. This specificity of bacteriophage is the basis of phage grouping of such organisms as staphylococci and typhoid. If the bacterium changes its surface structure, e.g. in the smooth—rough variation it becomes resistant to phage infection.

With human virus infection the elucidation of attachment and entry is much less satisfactory. In the case of influenza we know that the virus particle will adsorb to specific receptors found on some species of R.B.C. (this is the basis of the Hirst Test). We believe that

in the lung similar receptors exist. With other virus systems very little is known but it is believed that fundamentally it is a problem of the pattern of electrical charges on virus and host. As to the mechanism by which the cell wall is breached and then closed even less is known. As the virus particle is devoid of enzymes it seems probable that the cell contains the necessary system although it is difficult to see for what purpose it is normally used.

The importance of this problem in the treatment of virus infection can be seen, for if we could block virus uptake we would be able to prevent virus infection.

Virus Replication

In order to understand virus replication and its importance in theoretical studies it is necessary to turn briefly aside and review the properties of nucleic acids. (For a fuller account see Gent 1963). There are two forms made up of either Deoxyribosenucleic (DNA) or Ribosenucleic (RNA) acids. In man DNA is used to transmit characters from one generation to another (i.e. it is genetic) and in the individual cell the nucleus which controls cell metabolism is composed of DNA. It is important to realize that in effect the same DNA structure may act at one time as a carrier of genetic information and at another as the controller of metabolic function. The nucleus controls the cytoplasm by sending it messages coded in RNA. These messages are converted into enzymes, etc., at specific active sites in the cytoplasm. Hence in mammalian cells there is a difference in the way these two sorts of nucleic acid are employed.

However, viruses are made of either form, e.g., most bacteriophages are made of DNA as is smallpox. Most other human viruses, e.g., Poliomyelitis and Influenza are RNA. Similarly plant viruses are usually RNA. So we have the situation where either DNA or RNA can act as a genetic carrier. Also the virus nucleic acid can dominate a cell and order it to change its metabolic pattern although the cell is normally controlled by a flow of RNA messages from a DNA nucleus.

The striking feature of virus multiplication is that the protein coat plays no part after the cell is infected. All the information needed to make fresh virus particles is contained in the nucleic acid. However, the protein coat not only protects the nucleic acid from damage but also helps in some way to get it into the cell. This is shown by the following type of experiment. Infectious, virus-free, RNA or DNA can be prepared from virus suspensions. These preparations will infect sensitive cells, which produce mature virus particles at the end of the growth cycle. However, suspensions of raw nucleic acids are much less efficient at infecting cells than the amount of nucleic acid would suggest. Hence we believe that the protein coat assists the nucleic acid to enter the cell. This idea was, of course, suggested in the previous section.

Once the virus particle enters the cell the protein coat is removed

by an enzyme present in the cell. One of the unsolved mysteries of virology is how this enzyme is restrained from removing the protein coats of the new particles which appear at the end of the growth cycle.

It is not proposed to discuss in detail how the virus nucleic acid captures control of the cell. From the outline of the normal control of cell synthesis it is apparent that one possible way would be to block the outflow of RNA messages from the nucleus and replace them by messages derived from the virus nucleic acid. The cell using these new signals would produce protein and nucleic acids of a new form.

The assembly of the protein coat around the nucleic acid spiral is still unexplained. It appears that both nucleic acid and protein may be present for some time before they come together. It is possible that towards the end of the cycle a new enzyme appears on the scene which favours the junction of nucleic acid and protein. Many virus particles appear inactive as judged by ability to infect and it is probably that construction and assembly are far from perfect.

Fate of the Infected Cell

At one time, largely influenced by the experience of bacteriophage workers, cells were assumed to be killed if infected. We now realise that the problem is much more complex than that. To begin with a great deal depends on the host cell as well as on the virus. This is reflected in the choice of cells for tissue culture where preference is given to those that are destroyed by the virus. Foci of destroyed cells are visible to the naked eye and allow us to do virus particle counts.

There is also the problem of the rate of release of virus and we now know that a picture of cells bursting and liberating all the virus at once is too simple. In many cases the cells liberate virus over a period of hours, and then either die or recover. In a few instances cells have been shown to produce virus without any change in their appearance. This situation, which may be much commoner than we know, makes diagnostic work extremely difficult.

Finally, as we will see later, some cells undergo a permanent alteration in their characteristics and begin to multiply, forming either benign or malignant neoplasms.

Interference Phenomena and Interferon

For many years it has been known that animals infected with two lethal viruses simultaneously may survive. The first example of this was seen with yellow fever and Rift valley fever in monkeys. There are now a large number of examples of this phenomena and there appears to be several different mechanisms at work. So far the complete explanation has not been found, nor has any practical application been suggested. It should be pointed out that this is not the same effect as that produced when large doses of attentuated virus are used to swamp a few living virulent cells, as will be described later.

Interferon is a term used to describe what are probably a group of substances produced by virus-infected cells, and which will protect susceptible cells from infection with a number of different viruses. A good example of interferon production is the system where cells are infected with UV damaged influenza virus. The infection is abortive but large amounts of interferon are liberated into the surrounding fluid. While interferon will protect cells against a number of different viruses it does appear to be most efficient if made in cells of the same broad group as those being challenged. Hence egg interferon is not very active in rabbit protection tests. Interferon acts at some stage of virus replication after the virus has entered the cell and it does not appear to be antigenic. Apart from the need to make it in mammalian cells its principal drawback is that it has to be present at the time of infection. This limits its value in clinical practice. It has great theoretical interests as it may represent one way in which the body, by making interferon, limits the severity of virus disease. Also if we could discover more about its mode of action it might prove the starting point of a chemotherapeutic agent, the difficulties in the manufacture of such substances being discussed in the next section.

Chemotherapy of Virus Infection

While every newly-isolated chemical and antibiotic is tested in a series of virus host systems no useful chemotherapeutic agent has yet appeared. The alternative approach is to attempt to design an antiviral agent from first principles. I propose briefly to review the nature of the problem. Since free virus particles are non-replicating they resist all but the crudest of antiseptics and on general principles there seems little hope of a useful substance of this type being developed. It is possible that a chemical may be found that blocks virus uptake by either acting on the virus or the cell receptors. Given early in the disease it would greatly modify the severity of the infection. Work has gone on along these lines, e.g., with influenza and its chemoreceptors, so far without success.

Once the virus enters the cell it becomes part of it and so to destroy it might kill the cell. While we would be willing to accept this with some infections, with others, especially in the CNS, we would be very reluctant. What we hope to be able to do is to find some component essential for virus construction which is not essential for cell survival. Since viruses are not chemically identical with the cell it has proved possible to identify several substances which satisfy these criteria. The next step is to make analogues which will compete with the original substance for incorporation in the new virus particles. If the analogues are not toxic to the cells and result in the production of non-viable virus they are suitable for clinical trial. While a number of products have been tested so far none has been successful.

We are at the moment in the "pre-antibiotic era" as far as virus disease is concerned. Hence we are spending a great deal of effort on preventive work.

Epidemiology

In some infections a study of the mode of spread has shown us how to take preventive measures. Yellow fever can be completely prevented by mosquito eradication. In the case of rabies, isolated countries can prevent the disease by destruction of all infected dogs and the maintenance of strict quarantine. This does not apply if there is rabies virus present in other animals which cannot be destroyed, which is the situation in the U.S.A.

In other infections such as poliomyelitis we have a good idea of the source of infection and the mode of spread. While good hygiene would in theory reduce the incidence it seems to result in rather fewer but older people being infected. As this group is more liable to contract the paralytic disease one has the paradoxical effect of improved sanitation apparently producing an increase in the number of cases. Fortunately there are only three types of virus and it is possible to produce both living and dead vaccines. Here we have in the light of all the evidence chosen, a campaign of active immunisation rather than eradication.

Viruses which spread by droplet infection are unlikely to be controlled by Public Health measures and only active immunisation is of benefit. A few diseases, such as measles, are due to viruses which occur in only one or two antigenic types. In these cases the problem is the technical one of growing the virus and deciding on the type of vaccine to be used. It is always satisfactory to reflect that smallpox has been controlled in this way for hundreds of years.

Infections due to viruses with considerable antigenic variation, or similar clinical conditions due to different families of virus are much less likely to be controlled by immunisation. As upper respiratory tract infections largely come into this class we are at something of a standstill in this field.

Attempts to alter the Viral Flora

With the widespread use of living vaccines the idea has been put forward that we might be able to control our environment by displacing all the wild type virulent viruses by attenuated strains of our own choosing. This is a concept that has not been tried in bacteriological infections and is worth a brief consideration.

Taking poliomyelitis, where it is most likely to be tried, the virus appears to be restricted to the alimentary tract in man. Except in severe infections it is probably not present in large numbers. If over a short period the whole population were given a dose of all three attenuated variants, the wild type would be swamped. If all the susceptible cells capable of supporting the wild type were occupied by attenuated virus then in theory, within a short time the virulent form would disappear. This idea has been tried out in a modified form in localised outbreaks of paralytic poliomyelitis. It is said to have worked in the sense that the epidemic was brought to a halt but the evidence is not entirely conclusive. Nevertheless this is a most

interesting idea and would be well worth trying out in some isolated community where it could be shown if the wild virus was displaced.

Clinical Virology

With the advent of tissue culture and the electron microscope we are faced by an increasing spate of viral agents. When virology was an observational science only agents which harmed man or animals were recognised. Now hundreds of different viruses are cultured and their relation to human disease is obscure. Still worse is the realisation that we are culturing only a fraction of all the viruses that exist. For example, one group of common cold viruses were discovered only when the pH and temperature of the culture fluid were altered. We also know that each new cell line we use in tissue culture turns up a few fresh viruses. In brief, if we used all possible cell lines at every reasonable pH, temperature, etc., we would multiply many times the number of viruses we know to-day.

Over the next few years we hope to see the clarification of a great deal of the confusion by the evolution of a system of classification. As in bacteriology we expect to find a few pathogenic for man, a few more invading the tissues under special circumstances, e.g., debility, and the great majority harmless.

Viruses isolated from the intestinal and respiratory tracts are at the moment the most difficult to classify. A by-product of polio research has been the discovery of the enteroviruses, consisting of polioviruses, coxsackie and ECHO (Enteric cytopathogenic human orphans), and more recently the splitting off from ECHO of the REO group (Respiratory Enteric Orphan). The curious expression "Orphan" is due to their discovery without at the time any known pathogenicity for man. As the polio picture has become clearer, attention has been focused on these orphan viruses as they are believed to be responsible for a number of obscure infections, especially in the CNS. For a good review of this field see McNair Scott (1961), or Stuart Harris (1962a).

Upper respiratory tract infection has always been of more interest in this country and in fact influenza virus A was first isolated here. More recently we have put a great deal of effort into isolating the common cold virus. During the war a number of infectious agents were isolated from military recruits congregated together for the first time. None of them seemed to be quite a common cold virus and in fact one of the chief difficulties in this work is to decide on the definition of a common cold. It is still believed by some workers that most of our colds are produced by a few viruses as yet unidentified. Good reviews of the problem are given by Brandon and McLean (1962) and Stuart Harris (1962b).

We have a surfeit of infectious agents discovered already and there are bound to be more to come. In the relatively defined field of influenza it has proved very difficult to produce an effective vaccine. It is probable that a common cold vaccine in terms of the agents isolated at the moment is not a practical proposition.

In summary we are left with the problem of virus infection of gut and respiratory tract spread by human contact, with multiple antigenic types. It is not possible at the moment to see how these infections will be controlled in the future.

Virus infection and Neoplasia

The possibility that viruses were involved in neoplasia has been debated for a long time. On the whole there has been a curious reluctance to accept the experimental findings. I was rather dubious of the possibility of producing a useful account of the complex and contentious field in such a small compass. Since progress is so rapid and potentially important the attempt has been made.

Filter passing agents producing neoplasia have been known in fowls for years (e.g. Rous Sarcoma virus). This infection can now be studied in tissue culture and malignant change has followed treatment of susceptible cells with RNA isolated from the virus. A number of other neoplastic diseases of birds have been traced to virus infection.

It was shown by Shope in 1933 that infectious papillomas in rabbits were due to a virus. This virus was similar to the virus producing infectious warts in man. In the rabbit the tumours are usually benign. When they become malignant the virus seems to disappear and it has been argued that the malignant change is quite separate from the infection. As a rather similar picture is seen in polyoma virus this part will be considered later.

Leukaemia in mice is sometimes due to a virus. During study of this system Gross noticed that parotid gland tumours developed in some mice given cell free filtrates from leukaemic mice. These results were confirmed and extended by a number of workers. It was shown that the virus was active in animals other than mice and the type of tumour was dependant on the host, e.g., parotid gland in mice and renal tumours in rats. (For a review of this work see Stewart and Eddy, 1960). The virus will multiply in tissue culture and can be passed through serial subculture. After a number of passages it has the same ability to produce tumours as the crude extract made from infected animals.

In young animals the virus multiplies and tumours appear, in older animals multiplication is rarely followed by tumour formation but the animals become immune to challenge by polyoma tumours. The origin of these latter antibodies is believed to be as follows. In the older animal some cells are transformed but the change is accompanied by an antigenic change. The immune system recognises these cells and destroys them. Hence there is no tumour formation and the mouse develops resistance to transplanted tumour cells. In young animals it is thought the immune mechanism fails to differentiate the tumour cells (Immunological tolerance).

Uninoculated mice housed close to polyoma infected animals acquire infection as shown by the presence of circulating antibodies

but they do not develop tumours. The antibody is passed to the newborn mouse and they become resistant to infection. Already laboratories have had difficulty in working with this virus because of the spread of natural infection in the stock mice.

Polyoma virus belongs to the Shope papilloma and human warts group. A great deal of work has gone into the study of the interaction of virus and cell in tissue culture. To begin with only a small fraction of the cells challenged become transformed (about 1 per cent.) But this rate is much higher than the spontaneous rate of appearance of malignant cells in untreated cultures (about 1,000 times). Hence we believe that the virus does not act by selecting pre-existing malignant cells. After the transformation the cells seem to pass through several stages before becoming fully malignant, during which process they appear to lose the virus. This is similar to the results with the Shope papilloma virus. Despite careful search it seems quite impossible to activate the virus from its latent form if in fact it is still in the cell. However, the cells are now different in a number of ways, one being antigenic as described above. In attempts to explain its malignant nature, studies in tissue culture suggest that the surface has altered in some way. Normally cells on contact arrange themselves in a pattern but these cells grow without regard to one another and become heaped up to form small tumours in the tissue culture tube. A great deal remains to be done but there is no shortage of interesting problems.

CONCLUSIONS

Virology is a rapidly expanding field with potentialities to appeal to a wide range of interests. It covers the last field in which a considerable number of human pathogens remain to be identified and classified. It presents a great challenge in devising methods of prevention and treatment. Finally for those with a scientific bent there are problems reaching to the very basis of genetic and biological control.

Acknowledgment

The author wishes to thank the Medical Illustration Department for their help in producing Figure 1.

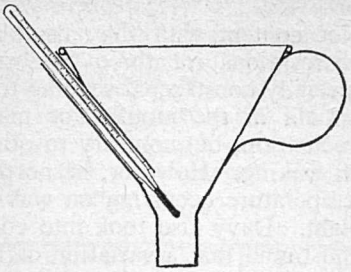
REFERENCES

BRANDON, F. B. and MCLEAN, I. W. (1962). *Advances in Virus Research*, **9**, 157.
EDDY, B. E. (1960). *Advances in Virus Research*, **7**, 91.
GENT, W. L. G. (1963). *Guy's Hospital Gazette*, **77**, 196.
MCNAIR SCOTT, T. F. (1961). *Advances in Virus Research*, **8**, 165.
STEWART, S. E. (1960). *Advances in Virus Research*, **7**, 61.
STUART-HARRIS, C. H. (1962a). *Brit. med. J.*, **i**, 1779.
STUART-HARRIS, C. H. (1962b). *Brit. med. J.*, **ii**, 869.

GENERAL READING.

British Medical Bulletin, September, 1959—Current Virus Research.
Cold Spring Harbor Symposium **27**. 1962—Basic Mechanisms in Animal Virus Biology.

Body Temperature in Infants and Children



By M. C. JOSEPH

A Clinical Lecture delivered on 9th May, 1963.

Historical

It is difficult to trace when the clinical thermometer was first used but there are references to its use at the beginning of the 19th century. It must be remembered that the early clinical thermometer was about 1 foot long and took 20 minutes to register, so that it was not the sort of instrument which one readily inserted into any orifice.

In 1803, Dimsdale gave an account of the effect of cold affusion in typhus fever and in the case histories refers to the temperature of his patients recorded by a thermometer placed under the tongue. In his cases he describes how a boy of seven was taken out of his bed, stripped, and a pitcher of cold water was tipped suddenly over him. Another affusion was given and by the fourth day after the first affusion the patient was entirely free from fever.

In case 7, he describes how the patient, a boy of 11 years was so benefited by the first cold affusion that during the short absence of the nurse in the evening, and feeling a slight return of the heat and uneasiness, he reached for a pitcher of cold water which was near him and poured it over himself while he was still *in bed.*

A little earlier than this, in 1801, Erasmus Darwin noted that a certain Dr. Alexander had carried out experiments which showed that sweating does not occur until the skin is cooled from 112° to 108°F. However. the New Medical Dictionary (Hooper, 1811) says under "Animal heat", "Heat is essentially necessary to life. The heat of a man in health is from about 94° to 100°F., and it appears to depend on the decomposition of the air in the lungs."

The normal temperature

It is difficult to be certain how the figure of 98.4°F. has become accepted as the normal oral temperature. It seems that it is accepted even less critically as the upper limit of normal, regardless of sex, race, age, individual variation, environment, activity and time of day. Lyon and Wallace (1932) consider that 98.4°F. has been accepted as a result of Davy's work, but on the Continent the figure becomes 37°C. or 98.6°F.

Davy (1863) took it upon himself, at the age of 55 years, to take his own oral temperature 3 times a day for 9 consecutive months.

Not content with this, he went to the tropics and made similar observations for three consecutive years. He had a thermometer specially constructed reading to 0.1°F. and emphasised that it should remain in the mouth for many minutes. He noted the diurnal fluctuation, but contrary to other observers found a maximum figure on waking. However, he noted the reverse in the tropics, the lowest temperature occurring on waking in the morning and the highest at night. Davy also took into consideration environmental temperature and found that a variation of 10°F. in England did not influence the mouth temperature, but in the tropics there was a small difference of 0.2—0.3°F. Davy also observed that a rise of 1°F. caused the pulse rate to increase by 6 to 7 beats per minute.

Whiting (1915) examined a prison population, and found the mean temperature to be 98.38°F., and it is quite possible that our present standard of 98.4°F. is based on readings taken from murderers, thieves and drunkards. It must be emphasised that both Davy's and Whiting's figures are those from active adults, not from those at rest in bed.

Williams, Bell and Pearson (1914) studied the temperature of school children with special reference to social differences. They did this by asking the teachers in different types of schools to record the mouth temperatures of their pupils. They recorded with regret that the headmaster of Eton did not consider that his staff had the time to make the observations, but applauded the decisions of the headmasters of Winchester and Charterhouse who agreed to co-operate. In general the main influence of social conditions operating at the time of the investigations, was to show that the poorer groups had a higher mouth temperature than the better-off groups, and this was probably mainly due to a greater incidence of phthisis and rheumatism in the poorer groups. The mean oral temperatures of both boys and girls from several different schools was about 99.5°F., with a standard deviation of about 0.5. This figure is considerably higher than the generally accepted figure of 98.4°F. or 98.6°F.

Methods of recording

In paediatrics, it is not usually possible to use the mouth for temperature recording during the first few years of life, and the rectum, axilla or groin is used instead. These sites, however, do not give similar readings. In 1902, the Physiology Department at Guy's (Pembrey, *et al.*) investigated the effect of muscular work upon the temperature of man, and in doing so compared the figures so obtained from the rectum, mouth and urine. They considered that the temperature of the urine—second to the rectal route—best reflected the internal heat of the body. They refer to the work of Haldane and Pembrey, who were able to record the temperature of 83 soldiers in $1\frac{1}{4}$ hours using the apparatus shown at the top of this article. They point out that the funnel is not strictly essential but that it enables the untrained man to direct the stream more rapidly and surely. The average temperature of the urine was 99.6 °F with a range of 99 to 100.8°F. In other studies on themselves, the mouth temperatures were about 36.5°C., rectal 37.5°C., and urine about 37°C. Muscular exercise

caused a rise in rectal and urinary temperatures (1—2°C.), and that in the mouth sometimes a rise and sometimes a fall. Burton Fanning and Gurney Champion (1903) also noted a fall in mouth temperature after exercise, in spite of a rise in body heat. They noted that a round of golf caused an average rise of 2.1°F. in the rectum and 1.7°F. in the urine, and that a second followed by a third round only caused a further average rise of 0.5°F. Tennis and bicycling both caused similar amounts of rise in the rectal temperature.

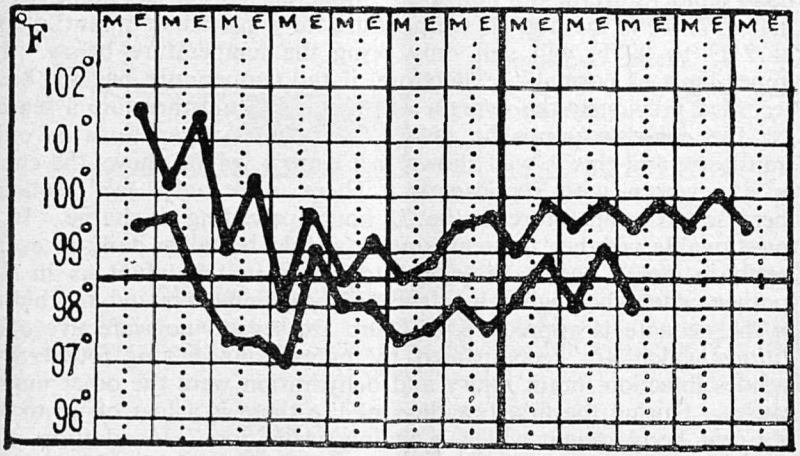


Figure 2. Simultaneous mouth (upper line) and axilliary (lower line) temperatures in a child with purpura at rest in bed.

Although absolute values are not always important, rectal temperatures are usually higher than mouth, and mouth higher than axilla or groin. Figure 2 shows simultaneous mouth and axillary temperatures in a child at rest in bed with purpura (Moncrieff and Hussey, 1948).

Temperature of the neonate

The premature infant tends to be poikilothermic. He conserves heat badly because he lacks subcutaneous fat, and because he has a poorly developed vasomotor centre. He also does not sweat much. The ambient temperature therefore has to be carefully regulated so that his rectal temperature remains about 99°F. Figure 3 shows a typical temperature chart in a premature infant (Corner, 1960). It starts low and gradually climbs to 96—97°F. by the tenth day.

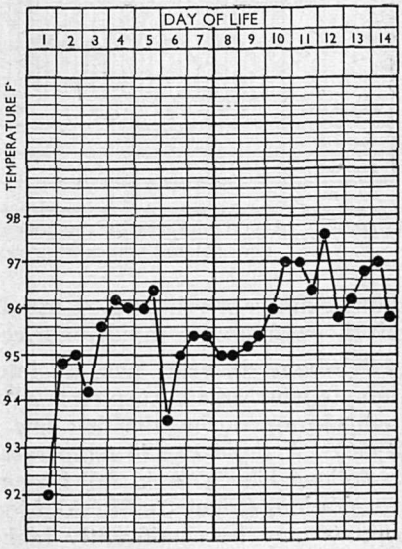


Figure 3. Rectal temperatures of premature infant, birth weight 2lbs. 4 ozs., nursed in incubator at 90° F.

The temperature of the mature newborn also responds differently compared with the child to various stimuli. His normal average temperature is rather lower, being somewhere between 97°F. and 99°F. rectally (Moncrieff, 1953; Craig, 1963). When he has an infection, the temperature commonly rises, often to over 102°F., but sometimes it does not rise and occasionally it falls. In addition, fluctuations in environmental temperature more readily influence the body temperature of the newborn. Moncrieff (1953) has pointed out that if 97°F. is the normal temperature for a particular infant, a rise of 2°F. to 99°F. will still only bring the temperature below "the upper limit of normal". Therefore, if the temperature has not been recorded previously the pyrexia will be missed and therefore a search for the cause may not be made. Sometimes the pyrexia is only transitory, and this is well shown in Figure 4, which shows the chart in a newborn with septicaemia. There were only two isolated increases in temperature in the 72 hours preceding discharge. It is questionable whether the temperature should be taken daily in every newborn, but it seems as logical to do so in the infant as in the mother, when the higher incidence of both infection and morbidity in the neonate is appreciated. There are several non-infective conditions which are accompanied by pyrexia, and Craig found that besides infection, brain injury and dehydration were the other major causes. During the first few days of life there is a loss of up to 10 per cent body weight which is mainly water loss. In addition, the water intake is poor and this, enhanced by a hot climate, may result in dehydration and with this a raised temperature. At this age, weight loss, pyrexia and dehydration could be the result of infection,

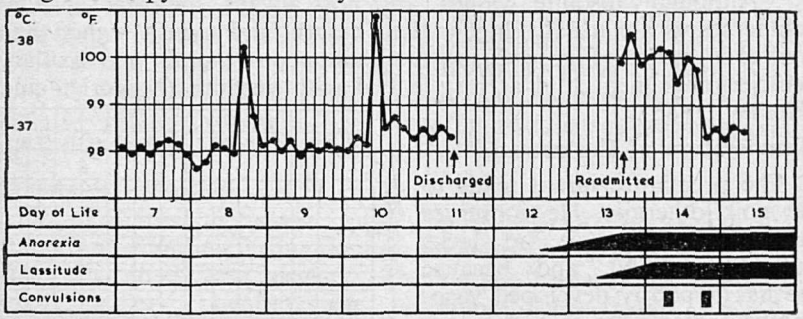


Figure 4. Rectal temperature in a newborn readmitted with septicaemia. Note two isolated spikes of pyrexia on eighth and tenth days.

but 24 hours of rehydration usually given by mouth but occasionally given parenterally, rapidly corrects the pyrexia.

About six years ago, an interesting observation was made that infants who suffered asphyxia at birth showed an alteration in body temperature during the first few hours of life (McClure and Caton, 1956). A rapid rise in temperature occurs after the apnoea and this is followed by a rapid fall in temperature with the onset of regular respirations (Figue 5). In addition, the initial temperature of apnoeic infants may be significantly higher than of those infants in whom

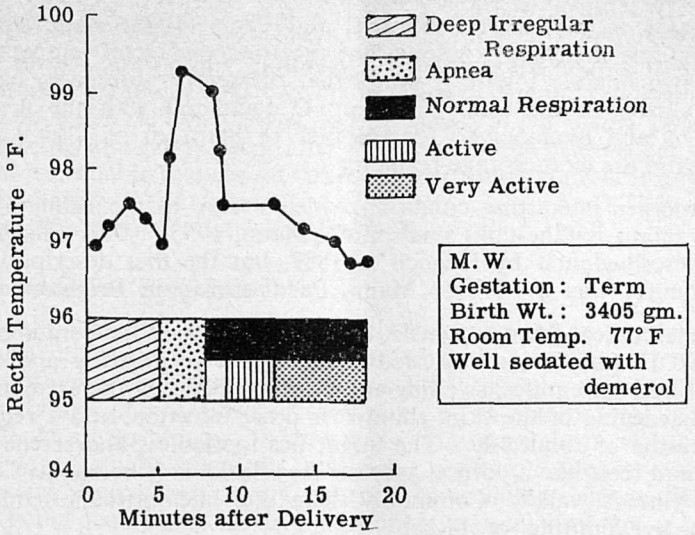


Figure 5. Temperature chart of newborn with asphyxia at birth. Note rapid rise of temperature after apnoea followed by fall coincident with onset of normal respiration.

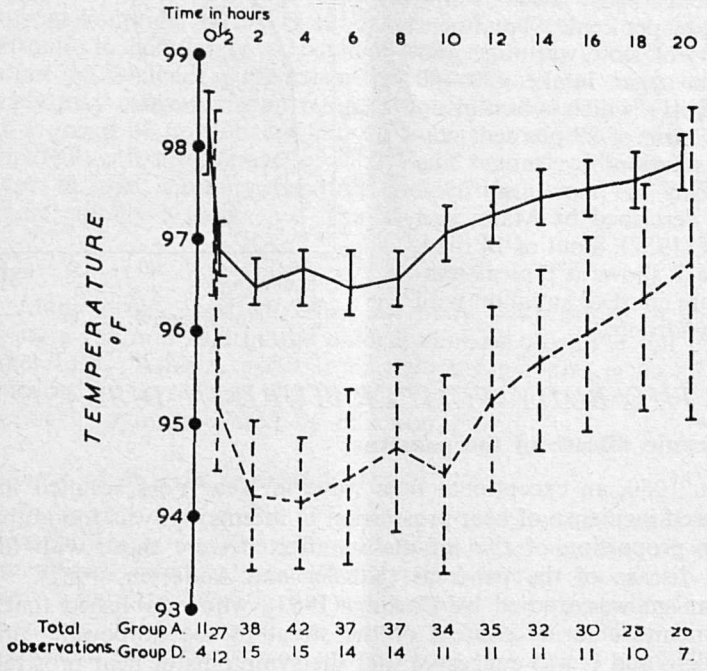


Figure 6. Serial rectal temperatures of neonates from birth. Group A, normals, Group D, asphyxia. The vertical lines are the 95 per cent. confidence limits of the means.

respiration is immediate. Burnard and Cross (1958) made similar observations in hypoxic infants, but recorded the rectal temperature every two hours. Figure 6 shows that the temperature was significantly lower in the asphyxia group D compared with the normal group A and remained so for the first 18 hours or so. In neither groups did the mothers take pethidine.

Another interesting condition which occurs in the neonate and young infant is "the cold syndrome" (Mann, 1955). This was probably described first by Henoch in 1889, but the first description in this country was by Trevor Mann, Paediatrician in Brighton.

The clinical features consist of a very low body temperature less than 90°F. (the lowest recorded has been 74°F.), apathy and food refusal, red extremities, swelling and pitting oedema of the extremities, local hardening of the skin, rhinitis or other infection, and a relative tachycardia of about 120. The infant lies motionless and serene and looks and feels like a corpse, yet "he is as florid as if he has just been for a winter's walk". Commonly there is a haemorrhagic tendency shown by vomiting of blood and rectal haemorrhage. The only investigation of note is a reduced blood sugar, which has occasionally been below 10 mgm. per cent. Treatment consists of slow warming, and a high sugar intake (30—60 Gm. daily), which is best given in the form of 20 per cent glucose solution by tube. The prognosis is poor and in a series described by Mann and Elliott (1957), 8 out of 14 died. Figure 7 shows a typical temperature chart of an infant with this syndrome.

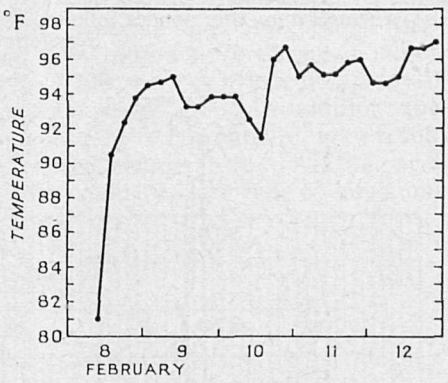


Figure 7.

THE BODY TEMPERATURE IN DISEASE

Fibrocystic disease of the pancreas

In 1950, an exceptional heat wave in New York resulted in an increased incidence of heat prostration in infants. It was found that a higher proportion of the infants so affected were those with fibrocystic disease of the pancreas (Kessler and Andersen, 1951). The mechanism was studied by Darling (1953), who established that the sodium and chloride content of the sweat of the fibrocystic infants was high, and it was suggested that the symptoms of heat prostration were due to excessive salt lost via the sweat glands. The symptoms of heat prostration were similar to those described by McCane (1936) in salt depletion.

Febrile convulsions

Infants and young children are more prone to fits than older children and adults, and one of the known stimuli is infection with pyrexia. Febrile convulsions do not usually occur before the age of six months and rarely occur after three years. The cause is not known, but it is probable that the rate of rise of the temperature is as important as the height of the temperature. The prognosis is good, only a small proportion having established fits in later life.

Non-infectious conditions

Although we associate pyrexia with infections, many groups of non-infectious conditions are associated with pyrexia. I have used the word pyrexia rather than fever as the latter may signify "a raised temperature plus a certain assemblage of symptoms" (Hale-White, 1897) which go along with infection. The non-infectious conditions include anaemia, leukaemia, malignant conditions, collagen diseases extensive burns and many others. In children, rheumatic fever and acute leukaemia are two prominent examples of non-infectious pyrexia. The periodic, or recurrent, syndrome is another example. Apley and Mackeith (1962) have recently discussed this syndrome, calling attention to its frequency and causation. Its components, all or some of which may be present, include recurrent abdominal pain, recurrent vomiting, recurrent headaches and recurrent pyrexia. This syndrome is commonly associated with anxiety. There is a fair amount of evidence supporting the hypothesis that excitement or anxiety may cause a rise in temperature. Renbourne (1961) showed that a group of boy boxers had an average temperature of 99.9°F. compared with an average of 98.9°F. in controls—the onlookers—except in one specially exciting competition when the onlookers became equally heated.

Drugs

Many drugs exert an effect on body temperature, belladonna causing a rise and aspirin and chlorpromazine causing a fall in body temperature. Aspirin, apart from reducing pyrexia, is useful diagnostically, for it reduces the pyrexia in rheumatic fever, but is less effective in pyrexia caused by infection.

Response of Pyrexia to treatment

In general, the pyrexia of respiratory infections responds rapidly to chemotherapy, usually within 24 hours, whereas those of urinary or meningeal infections usually take 48 hours or more. A recent patient with osteomyelitis did not respond to tetracycline but the pyrexia rapidly responded to sodium methicillin (celbenin). This is important with the increasing frequency of resistant staphylococci.

A few days after the beginning of antibiotic treatment of respiratory infection it is not at all uncommon to observe a small rise of temperature on the 6th or 7th day. This is not due to the drug,

for it often occurs in patients treated with a single dose (stoss therapy) of a drug (Joseph, 1958). We do not know its cause, but it is important to recognize its frequent occurrence, as otherwise it may be thought to be due to a relapse or to extension of the disease.

This survey is necessarily brief and incomplete, but I hope I have stimulated your interest in a subject which we rather take for granted.

REFERENCES

APLEY, J. and MACKEITH, R. C. (1962). *The Child and his Symptoms.* A psychosomatic approach. Blackwell Scientific Publications. p. 60.

BURNARD, E. D. and CROSS, K. W. (1958). *Brit. med. J.*, **2**, 1197.

BURTON-FANNING, F. W. and CHAMPION, S. G. (1903). *Lancet*, 1, 856.

CORNER, B. (1960). *Prematurity.* London. Cassell.

CRAIG, W. S. (1963). *Arch. Dis. Childh.*, 38, 29.

DARLING, R. C., DI'SANT AGNESE, P. A., PERERA, G. A., ANDERSEN, D. H. (1953). *Amer. J. med. Sci.*, **225**, 67.

DARWIN, E. (1801). *The Laws of Organic Life*, part 2.

DAVY, J. (1893). *Physiological Researches. London.*

DIMSDALE, W. J. (1803). *Med. and phys. J.*, **9**, 206.

HALDANE, J. S. and PEMBREY, M. S., quoted by Pembrey, *et al*, in *Guy's Hosp. Rep.* (1902). **57**, 283.

HALE-WHITE, W. (1897). *Lancet*, **1**, 1659-1662 and 1721-1727, **2**, 1—8 and 73—78.

HENOCH, E. (1889). *Lectures on Children's Diseases.* Translated by John Thomson. London. **1**, 53.

HOOPER, R. (1811). *A New Medical Dictionary.* Longman, Hurst, Rees, Orme and Co.

JOSEPH, M. C. (1958). *Brit med. J.*, **1**, 487.

LYON and WALLACE (1932). *Brit. med. J.*, **1**, 980.

KESSLER, W. R. and ANDERSEN, D. H. (1951). *Paediat.*

MCCANCE, R. A. (1986). *Proc. Roy. Soc. B.* **119**, 245.

MCCLURE, J. H., and CATON, W. L. (1956). *J. Paediat.* **48**, 23.

MANN, T. P. (1955). *Lancet*, **1**, 613.

MANN, T .P. and ELLIOTT, R. I. K. (1957). *Lancet*, **1**, 229.

MONCRIEFF, A. and HUSSEY, B. J. (1948). *Brit. med. J.*, **2**, 972.

MONCRIEFF, A. and (1953). *Brit. med. J.* **1**, 1.

PEMBREY, M. S., ARKLE, C. J., BOLUS, P. R. and LECKY, H. C. (1902), *Guy's Hosp. Rep.*, **57**, 283.

REDBOURNE, E. T. (1961). *J. psychosom. Res.* **4**, 149.

WHITING, M. H. (1915). *Biometrika*, **XL**, 1.

WILLIAMS, M. F., BELL, J., and PEARSON, K. (1914). *Studies in National Deterioration* 9. Drapers' Co. Research Memoirs.

Obiter Scriptum

A Clue from the "Daily Telegraph" Crossword of 23rd September, 8 down:

"London Hospital for which boys collect pennies".

A Calendar of Guy's Clubs' Activities during the Michaelmas Term

Music Club

Rehearsals every Tuesday at 5.15 p.m. in the Quiet Games Room in preparation for the performance of the "Messiah" on December 10th in Southwark Cathedral.

Jazz Club

Meetings are held at Friday lunch-times in the Quiet Games Room to listen to tape recordings and records. Two bands are being run and they always need stand-ins and support.

Scottish Country Dancing Club

The Club meets at 8.0 p.m. on each Thursday during academic terms in the Students' Union.

Theatre Club

Rehearsals are now in progress for the winter production of "The Strong are Lonely", and all backstage help will be welcomed. Weekly play-reading sessions will be restarted at the beginning of the academic term.

Quodlibet Society

This term talks are being given by people with first hand experience of the troubles in Southern Africa. On October 17th, Alan Rake, Editor of "Africa, '63", talks on "Drum", and on November 7th, Maurice McWilliam on the "Economics of Africa in relation to Britain".

Art Society

Two lectures and a visit to Guildford Cathedral are being arranged before Christmas. A film show will be held on October 22nd, and the Annual Art Exhibition is from October 28th until November 9th.

Photographic Society

The next meeting is on 24th October in the Clinical Theatre of New Guy's House. A Kodak slide lecture on "Developing and Printing" will be shown. On the 28th November, a colour slide competition will be held for both holiday and general photographs.

Christian Union

Meetings will be held throughout the winter on Mondays at 5.30 p.m. in the Students' Club. The Autumn House Party is over the week-end of November 1st to 4th at Sunbury Court, Kingston-on-Thames. The meetings will include a study of the Person and claims of Jesus Christ and an enquiry into Paul's letter to the Christians at Ephesus.

Catholic Society

Mass at 5.30 p.m. each Monday in the Church of Our Lady of La Savette, Melior Street, is the major activity of this society. In addition, meetings on topics of general interest are held about every three weeks.

Pupils' Physical Society

Several meetings have been arranged tentatively where interesting medical cases and topics will be discussed. It is hoped that there will also be exchange visits to other hospitals.

Debating Society

An Annual General Meeting will be held in the second week of October and debates for the future months will then be arranged.

AFRICA I—*Quodlibet*

" Under apartheid, in this land of plenty, sixty per cent. of Africans live below the breadline, and the rate of infant mortality is one in four". The land of plenty is, of course, South Africa. The statement was one of many startling facts presented to the Quodlibet Society by Mr. John Lang, a South African lawyer. Exiled in this country since 1961, Mr. Lang was forced to leave the Republic under political pressure, following three terms of imprisonment without trial. Mr. Lang confined his talk to the evolution of a society where thirteen million coloured persons, who live in—share would be a contradition in terms—this southern tip of Africa, are dominated and exploited by three million South Africans of European origin, and whose lives Dr. Verwoerd and his Nationalist Party, " attempt to regulate from cradle to grave".

The basis of this authoritarian state was laid down in the South Africa Act introduced by the Imperial Parliament in 1909. This created the Union of South Africa, to be governed by a Parliament to which no coloured person might be elected and whose members would, with the exception of Cape Province, be elected by only white voters. This was followed by the Native Land Act of 1913, which prevented any African from acquiring freehold land. In 1936, the coloured voters of Cape Province were removed from the common roll and instead allowed to elect three European representatives to the House of Assembly. The rule of apartheid has recently been further secured by a cunning scheme of electoral preferences, which resulted in the Nationalist party obtaining fifty unopposed seats in the 1961 General Election, and acquiring two-thirds of the seats in the House with only forty-six per cent. of the votes cast. The present Government, Mr. Lang concluded with alarm, was elected to power by only six per cent. of the total population of the country.

The Nationalist Party claims to recognise basic ethnic differences and seeks to allow each ethnic group to develop according to its own characteristics and culture in separate areas. Thirteen per cent. of the land surface has been set aside for the development of Bantu homelands or *Bantustans*, where theoretically eleven million Africans will one day settle. These areas, Mr. Lang described as largely desert, and are not economically viable. At the moment they are occupied mostly by women and old folk and are ruled by Parliaments, whose composition and power are determined by the National Government.

At present, seven million Africans remain in the white man's area (84% of the land's surface), where they are subject to severe restrictions of freedom and where they are allowed to remain for only as long as their labour is required. The African may not own his own house and his daily activities are governed by possession of a pass book. At Sharpeville in March, 1960, sixty-eight Africans were killed by the police whilst protesting against the latter restrictions. Strict segregation exists at all levels. Of education, Dr. Verwoerd said, "When I have control of Bantu education, the Bantu child must be taught that there is no place for him in the European community above the level of certain forms of labour".

Mr. Lang described the Nationalist Party now as " a highly disciplined racial machine". It has moved the country further towards a totalitarian state by a series of acts which effectively limit all undesirable protests and opposition. A person inciting another person to break a law by way of protest, or being convicted of inciting a strike, may receive a fine of £500 or five years' imprisonment with hard labour. A person may be sentenced to death for writing a slogan on a wall. Habeas Corpus is virtually suspended and thousands of Africans are imprisoned without trial. Any newspaper which prints any statement by a banned person commits an offence. The recent Suppression of Communism Act is open to such a wide interpretation that any organisation, meeting, church service, letter or conversation may be banned.

For fifty years coloured South Africans have suffered aggression with courage and tolerance. Their African National Congress is now banned. Mr. Lang continued, " There are many who believe that (*now*) only violent resistance will bring about a transfer of political power into the hands of all people". "There are many others who fear that not even violence will achieve this end". The white South African, the speaker explained, fell into one of two groups—" those

who fear change and those who fear those who fear change". " Fear and race pride blind them to the vision of what South Africa might be without apartheid and Dr. Verwoerd".

South Africa remains historically and economically tied to the United Kingdom, selling forty per cent. of all its produce to this country, and in 1961 reciprocally importing 147 million pounds' worth of goods, including arms for its growing army. Britain still holds large capital investments in the Republic. The future of the neighbouring Protectorates of Basutoland, Swaziland and Bechuanaland lies in the hands of the British Government. Hence Great Britain is committed to play a part in South Africa's stormy future. If she does not act now, questioned Mr. Lang, which party will she support when coloured faces white on either bank of the Limpopo river?

IAN BAKER.

NOTICES

Harvest Thanksgiving Service

The Harvest Thanksgiving Service will take place in the Guy's Chapel on Sunday, October 13th, at 10.45 a.m. Gifts of flowers and fruit for the decoration of the chapel will be warmly received and should arrive on Friday or early Saturday morning. Edible produce is distributed to needy people living in the vicinity.

Motoring Club Annual Gymkhana

This year, the Gymkhana is to be held in the car park of Chiswick Market on Sunday, 20th October, 1963, from 11 a.m. A number of interesting events, including handling and manoeuvring private motor cars, has been arranged, and it is hoped that the programme will appeal to all motoring enthusiasts at Guy's. Prizes awarded will include one to the best lady driver and should anyone be discouraged from entering due to the non-availability of a suitable vehicle, I will be glad to assist in providing one.

MALCOLM J. BURKE,
Hon. Sec., Motoring Club.

REPRINTS

Reprints of the following articles recently published in the *Gazette* are now available:—

Bermondsey and Southwark, IV., " *Life and Health* ", by Roger Blaney.
A Scientific Background to Clinical Medicine:—

1. *Fundamental Genetics* by B. J. Rickard.
2. *The Biochemistry of Genes* by W. L. G. Gent.
3. *Human Chromosomes and their Abnormalities,* by Janet Northfield.
4. *Inborn Errors of Metabolism* by P. F. Benson.
5. *Congenital Abnormalities* by R. G. Spector.
6. *Sex Determination and Development,* by J. L. Hamerton.
7. *Statistics in Clinical Medicine,* by C. P. Wendell-Smith.
8. *The Mitochondrion,* by A. N. Davison.
9. *Aspects of Normal and Abnormal Antibody Production,* by G. Payling Wright.
10. *Immune Diseases and Autoimmunity,* by M. H. Lessof.
11. *Transplantation Immunity,* by Shireen Saleh.
12. *Current Virology,* by R. H. Gorrill.

These and subsequent reprints in this series, may be obtained, price 1s. each, from the Manager. Gazette Office.

SPORT

New arrivals at Guy's should take heart from the park, around which so many buildings conglomerate. This green oasis in a land of brick serves to remind all students that sporting facilities exist and in fact the Clubs' Union has a variety of clubs dedicated to sport which are comparable to many Universities, and, certainly, most Colleges. Within the boundaries of the Hospital, a swimming pool, a gymnasium, squash courts and table-tennis facilities exist. A short journey away from London Bridge Station, Honor Oak Park offers two rugby pitches, a hockey and a soccer pitch, a cricket square, hard and grass tennis courts and athletic facilities. There is, in addition a splendidly equipped Club House, together with a tiny, but well-stocked bar.

Thus opportunities exist to participate in most sports and, if any fresher wants to make enquiries at any time, pigeon-holes under the normal alphabetical rack in the corridor leading to the Spit, in the College, enable secretaries to be contacted.

The curriculum these days may give the faint-hearted an excuse for not participating in their favourite athletic pursuit. But it does provide an opportunity for everyone—Wednesday atfernoon is officially a half-holiday, and Saturday's programme is always full and varied. Sporting contact is not all—for the opportunities provided for medical to meet dental students and for both faculties to meet the very varied and diverse opponents makes for useful social rapport.

Clubs have notice boards in the aforementioned corridor in the College, and teams are posted there as early as possible before a fixture. It is absolutely essential for the smooth running of any Club that its members tick off and indicate their availability for any game as promptly as possible. Running large clubs is a thankless task for secretaries if they are not informed two days before an event that a performer cannot attend, and it is always a bone of contention, and an unnecessary one, when fourteen rugger, or ten hockey or soccer players, take the field.

Finally, all sports thrive on support, and Guy's teams are no exception. So, if there are those who feel disposed not to actively engage themselves, the supporters' rôle is open to them. They will be particularly welcome during the Cup competitions, and they can reap some of the advantages accruing to all who try to uphold and further the good name of Guy's on the sports field.

RUGBY

Against Cambridge City, the first evening match of the season, Baker was brave in making changes in the side and altering positions. This enabled him to review the talent which he had at his disposal, and resulted in the two best tries of the match, but alas also two pushovers.

The game with Blackheath, who are one of the Club's oldest opponents, was awaited with interest as the new rules were temporarily being put into force. Although the game was somewhat unsatisfactory on record, the forwards stood up to their difficult task with spirit and verve. Contrary to Press impressions, the side turned out clean-shaven and clad in shorts.

At Sunbury on Saturday, Guy's flattered to deceive, and for the first twenty minutes of the game they gave as good as they got, and were only a try and a penalty goal down at half-time. The second half resolved into some scrappy play, and much of the earlier drive was lost. However, only late in the game did London Irish begin to play as a team and establish their superiority in a rather disappointing game, the Hospital going down 0—23.

HOCKEY

The Club open their season on Saturday, October 12th, with a fixture against South Saxons. Captain of the side this year is David Loader, who hopes to sustain last season's enthusiasm by running four elevens again as and when weather permits. He is fortunate in inheriting sides whose standards remained

high throughout the season and feels that, with the talent at his disposal, it should be possible to improve upon the standard of the Club.

It is obviously a disadvantage to only have one home pitch available, and it remains a handicap towards running five teams during the season. The first team have only lost one player, M. Conybeare, and are not aware of new players arriving, and so would particularly welcome any new talent to make its presence felt. Players available include K. E. Haynes, who has played for Somerset, and three others who have played for United Hospitals. New fixtures this season include St. Edmunds Hall, Oxford, Oriel College, Oxford, and Jesus College, Cambridge.

This year the club hope to repeat their successes, playing and social, at the Easter Hockey Festivals. The first team, in particular, left their mark on Folkestone last year by winning all their matches. This year the Club desperately needs second, third and fourth eleven umpires, and anyone who could help in this respect should contact the captain of hockey as their services would be greatly appreciated. Previous hockey umpiring experience is not necessary, but would obviously be an asset.

Emphasis in training has been laid upon tactics and stick-work, and it is hoped that the end of season goal record will reflect favourably, as last season so many attacks were thwarted owing to sluggishness in trying to split the opposition defence.

The Club welcomes back to the team J. R. P. F. Liddiard after his long absence from the game. During this period his enthusiasm in the Club has never flagged, and it will be a change to see him in action rather than on the touch line. Loader's primary ambition this year is like the other sporting captains, to bring back the Inter-Hospitals Trophy to Guy's.

ASSOCIATION FOOTBALL

The season opened on Thursday, September 19th, with Guy's travelling to Roehampton to play a strong Bank of England side. The Guy's team took to the field looking forward to a season which will bring them, it is hoped, many successes. The game was strongly contested and they were somewhat unlucky to lose after fighting for what seemed to be a certain draw. Their ardour was somewhat further damped when, against a Lancing Old Boys' side, the side went down 0—2. Some scrappy play from Guy's prevented them from earning the rewards which they deserved.

The side lacked finesse in both these games, but against the Staff, the team found their old form and recorded a resounding victory, 9—0.

Reports and Results

RUGBY

GUY'S v. BLACKHEATH

At H.O.P. September 21st, 1963

On a dull autumn afternoon Blackheath beat Guy's in a somewhat scrappy game by 20 points to 3.

The main interest of the game was the trial at the request of the Rugby Union of two experimental laws. These laws, proposed by the South Africans, are to be considered at the forthcoming special general meeting in January of the International Board which makes changes in the Rugby Union rules every five years. Variations to Laws 15, 18 and 27 were tried as follows:

(a) When a scrummage is awarded following a line-out it shall take place 15 yards from the touchline.

(b) No player of the team losing possession of the ball in a scrummage or line-out who is not part of the scrummage or line-out or the scrum half may be nearer than ten yards from the line of the scrummage or line-out before the ball comes out of the scrum or the line-out ends.

The effect of the first variation is to make a wide margin between the touch-line and the scrum for breaking on the blind side. The effect of the second is to prevent the defending three-quarter line from advancing for purposes of defence upon the attacking three-quarters, who therefore have an extra ten yards of open field in which to launch their attack.

Those who saw Cambridge City defeat Guy's on the previous Wednesday evening must have hoped that the new law would allow the Guy's three-quarters to get going against Blackheath, because against Cambridge each of them was tackled almost as soon as he caught the ball. However, so slowly did the ball come out of the scrum and reach the backs that we saw the same fault repeated against Blackheath. If Guy's are to be successful this season they will have to learn to heel the ball out of the scrum quickly and to get it down the line soon enough for the three-quarters to have room in which to move. Season after season Guy's seem to be particularly strong on the wing, but they

usually play as if these positions did not exist.

For the first twenty-five minutes of the game Guy's, though mainly defending, seemed in no great danger. Kingdom and Brown were prominent for Guy's in the loose mauls and Myall at full-back was handling well and saving much ground with good kicks. The Blackheath three-quarter movements were breaking down due to dropped passes and Guy's were being given a succession of penalty kicks for scrummage infringements. Nevertheless, Blackheath were winning set scrums through better shoving and King was a great help to them in the line-outs. Again and again from scrum or line-out Murray at scrum-half missed chances of getting the ball down the line and kicked into touch with no ground gained and the ball lost to the opposition. Once the Blackheath fly-half, Mawbey, narrowly missed a long shot at dropping a goal and twice the line was saved, first by Biggs who caught a short kick ahead near the corner flag and then by Edgar who bundled the Blackheath wing, Sibley, into touch following a short penalty kick. After the pressure was relieved Edgar tried one of a series of unsuccessful attempts at kicking a penalty, this time from the half way line. At this point two misfortunes befell Guy's. Following a twenty-five yard drop-out which was charged down, Edgar knocked the ball on in an attempt to pick it up. Coming back to help him a forward fell on the ball, offside. A penalty kick was given and Clarke, playing full-back, kicked a goal.

One feels that errors of this sort were not meant to be punished by three valuable points, and two minutes later, as if to even things up, the referee gave a similar penalty to Guy's which Biggs narrowly missed. A good break by the Blackheath stand-off half led to a scrum on the Guy's line and Price, who had been hooking well for Guy's, was taken off with a bad cut over the eye and concussion. Seven forwards were unable to hold Blackheath, who in the space of the next ten minutes, managed to score two push-over tries, the second one with Murray on the ball at the time.

Half time score: Blackheath 9 points; Guy's Hospital nil.

There was some vigorous play in the loose mauls in the second half with the Guy's forwards holding their own. Although Price returned, his hooking understandably, was not so good as before and being shoved in the scrums Guy's continually lost the ball. On the few occasions they got it, it came out too slowly to be of use to the three-quarters. Poor tackling in mid-field let Sibley through for an unconverted try. A good dribble by several Guy's forwards took the ball over the Blackheath line where a touch down was made. The Blackheath full-back, Clarke, ran up to take the drop out and finding his way blocked by several Guy's forwards he peevishly punted it into the stand. The referee presented Guy's with a penalty kick on the twenty-five for deliberate waste of time and Biggs scored the three points. Blackheath were now getting on top. Guy's were losing the scrums and tapping back in the line-outs was losing them ground. Defending their own line, Guy's started a movement on the blind side but a loose pass went to the Blackheath wing who dived over into the corner. Another try soon followed when Mawbey was allowed to run through and score under the posts. This try was converted to make it 20 points to 3.

Although the experimental laws did not appear to make much difference to this game I think they will give a good side more room in which to launch an attack and will therefore be an incentive to more open play. The Guy's team will have to get over their tendency to shut the game up. They need to realise that skilful and spectacular running and passing, besides being attractive to watch, is fun to play. Watching Peter Harris play for Blackheath against his old hospital and later Dick Hawley in the Blackheath A side, I could not help thinking what a strong side Guy's would be able to field were they to play as a club with such players as Bill Treadwell (now playing for Wasps), Bill Hackett (now playing for the London Irish) and other former members of the side.

TEAMS:

Guy's: Myall, R. W. T., Biggs, D. A., Allen, A., Edgar, J. A., Fleming-Jones, D., Thomas, J. C., Murray, M. D., Davies, J. E., Price, E. S., Fisher, A., Kingdom, A., Peace, P. K., Brown, R., Hartley, D., Baker, I. A. (Capt.).

Blackheath: Coventry, S., Clarke, M. C., Sibley, P. C., Habbershaw, G. R., Blacklock, D. J. S., Mawbey, J. W., Evans, R., Stevens, D. J. (Capt.)., Carter, R. J., Ostling, P. L., Horton, A. L., King, P. T. C., Harris, W. R., Younger, T. N., Beckwith, M. E.

T. L. T. LEWIS

GUY'S v. CAMBRIDGE CITY

At H.O.P. *September 18th, 1963*

Cambridge City were a very good team who had obviously benefitted from the match practice gleaned from four previous contests. The scrum, although not massive, generated a controlled heave which brought a "push-over" try after 25 minutes. Morris attempted two very long-range penalties in quick succession but was fractionally awry on both occasions; not until he joined the line did Guy's manage to score. The three-quarters seemed too intent on propelling the ball in a lateral direction, rather than progressing towards the opponents try line. Cambridge three-quarters were quick to grasp this and took great delight in bowling over the Guy's centres and wings. Just before half time the City scored twice, once when Hancocks was given an overlap, and again when a scond pushover try was conceded.

(Half time, 11—3).

Shortly after half time, Edgar, who had worked very hard in defence and attack, kicked ahead and outpaced the full-back to score in the corner. The conversion failed. Two penalties, whose aetiology was rather obscure, put Cambridge another six points ahead, but Williams picked up a loose ball close to their line and Guy's were much on terms with another five points. However, the home side's pressure wasn't sustained, and even though Biggs covered extremely well two tries were conceded as the fire faded from Guy's play.

Team: A. M. Morris; D. A. Biggs, D. Fleming-Jones, J. A. Edgar, J. C. Thomas; A. Allen, M. D. Murray; A. Fisher, E. S. Price, W. Howell; A. J. Kingdom, T. L. Williams; D. Hendrick, P. Peace, I. A. Baker (Capt.).

R. W. T. MYALL.

'A' XV v. OLD WHITGIFTIANS

At H.O.P. September 28th, 1963

Result: lost 0—3.

'B' XV v. Bantams. Drew 3—3.
Wanderers v. London Cornish, lost 3—11.

ASSOCIATION FOOTBALL

GUY'S 1st XI v. BANK OF ENGLAND
Roehampton. Thursday, September 19th.

Result: Guy's 1; Bank 2.

Guy's opened their season with a new fixture against the Bank of England. The match, an evening one, was played in excellent conditions at Roehampton.

The game opened with both sides playing attractive soccer. Play was even for long spells, one side attacking and then the other. J. Cutler was prominent in the Bank's penalty area and the Hospitals defence was well served by their full-backs with solid anchor work by the centre-half, J. Cochrane. The Bank forwards linked up well with their halves, a move that Guy's never really countered as a result of their loose marking; this was particularly noticeable at throw-ins and goal kicks. The sides changed over at half-time with neither team having found the net.

The game continued on much the same pattern for the second half. However, Guy's were soon in arrears as a result of a defensive error by the goalkeeper. They fought back well and Shepherd unlashed a powerful drive from 30 yards, the ball hitting the cross-bar and rebounding to A. Palmer who calmly found the net. Cutler went close with a fine flying header. But quite unexpectedly with practically the last kick of the match the Bank went ahead as a result of another defensive error. The Bank had few direct attempts at goal and Guy's rather undeservedly lost by the odd goal in three

The eleven should learn a lot from this match; the defence must mark closer, particularly the half-back line, so that they might challenge for the ball in the tackle as their opposing man meets it. Credit must be given to the centre-half and full-back, perhaps singling out V. S. Holden for his industrious play. The inside forwards will have to work more and find the open spaces. It is to be hoped that they will develop into playing a steady, simpler game keeping possession and then moving strongly 'on the burst' for the final move. R. Shepherd, the right-wing, tends rather at the moment to hang back, make a fine pass, and then watch the move develop (or fade). Admittedly, invaluable work is done in his own half but his talent is needed in the forward line, especially as he has the best shot in the team.

Team: K. C. J. Hughes; P. Sheridan, V. Holden; P. D. Davies, J. Cochrane, N. Trayfoot; R. Shepherd, B. Mason, J. Cutler, A. Palmer, A. Atkins.

GUY'S v. LANCING OLD BOYS
At H.O.P. Saturday, 21st September, 1963

Result: lost 0—2.

On a wet slippery surface, Guy's played their second game of the season against a fast, fit Old Boys' side. Lancing used a 4—2—4 formation, which Guy's never really fathomed and consequently the Hospital failed to settle down into the rhythm of last season. However, after two narrow misses from Guy's, Lancing broke away and scored with a long range shot from the right.

A tactical talk at half-time put some spirit into the Guy's team and for 20 minutes in the second half, they dominated the game. However, some fine goalkeeping and poor shooting kept the Lancing goal unscathed. When Lancing scored again with a good shot from the edge of the penalty area, the result was so longer in doubt, and the game petered out with some scrappy and unimaginative football. This disappointing game showed little thought or fight from the Guy's team and some method and basic football intelligence must be used in future games.

GUY'S v. WESTMINSTER (friendly)
At H.O.P. Wednesday, September 25th, 1963

Result: won 4—0.

RIFLE CLUB

The winning of the United Hospitals Cup at Bisley in July, culminated a successful year for the Rifle Club

During the winter season (small-bore), '62-63, two teams fired once a fortnight in leagues run by the United Hospitals. The "A" Team finished 3rd out of 8 teams, and the "B" Team 3rd out of 7. D. Wardle and R. Ringrose shot consistently well, both having final averages of 95.285 ex 100.

R. S. Jenkins did well in an individual competition run by U.H. to win his division.

Two members, P. L. Jordan and M. Thomson, shot regularly for U.H. against Oxford and Cambridge Universities, and other London clubs.

The Staff Match had to be cancelled, but it is proposed to have one this year in the middle of October

The full-bore season began with a success in the Pafford Cup, an inter-college competition organised by the University of London Rifle Club, over two distances, 200 and 500. Guy's "A" Team took first place out of 14 entries with a score of 367 ex 400. B. D. Glynn shot very well in inclement conditions to score 95 ex 100 His range scores were 48 ex 50 and 47 ex 50.

This means that he has at 200 yards—the width of the Thames at London Bridge—put 8 shots through an area the size of a small saucer and missed this area at the most, by only 3in with 2 shots. Similarly at 500 yards (¼ mile), 7 shots were within an area roughly the size of an L.P. disc, and all 10 went through an area the size of a bicycle wheel.

The "B" Team obtained 11th place with a total of 339 ex 400.

The following week 40 competitors competed in the University of London Championships. M. Thomson took 1st place with 100 ex 105; B. D. Glynn was 9th with 96, and P. L. Jordan 10th with 95. The team competition fired at the same time was also won by Guy's.

In a friendly match against Farncombe and Godalming R.C., Guy's managed a win for the first time in this annual event 296 to 282 ex 350. K. M. Pilcher, the Guy's man who won the Queen's Prize this year (the ambition of every devotee of the sport) is a prominent member of this club.

The only defeat the club suffered was at the hands of the staff! Dr. A. K. Mant, an ex-Great Britain shot, led a strong team to a 42 pt. win. Dr. Mant made 93 ex 100; top score for the students was made by P. L. Jordan—91.

Finally in the National Rifle Association's Imperial Meeting in July, Guy's won the 2ft. 6in. high United Hospital Cup, beating London Hospital by 9 pts. This completed a very satisfactory season and it is hoped to continue this trend A full programme is planned for the coming season, and with the help of old hands and new blood, an even more successful season is well within the club's capabilities.

M. THOMSON

HOSPITAL INFORMATION

APPOINTMENTS VACANT

GUY'S-MAUDSLEY NEUROSURGICAL UNIT

Applications are invited for the post of **Registrar** (Middle grade) for one year commencing in November, 1963. The Unit, which is housed in the Maudsley Hospital, serves both Guy's Hospital and the Bethlem Royal and the Maudsley Hospitals. Applications should be made by **19th October, 1963,** to L. H. W. Paine, House Governor and Secretary, Maudsley Hospital, Denmark Hill, London, S.E.5.

ENTRY OF STUDENTS

October, 1963

MEDICAL SCHOOL

1st Year

Name	School
Barford, D. A. G.	Michaelhouse, Balgowan, Natal
Bowen, J. R.	Wycliffe College, Stonehouse, Glos.
Davenport, P. J.	Bromsgrove School
Dunnill, R. P. H.	Charterhouse
Franklin, W. H.	Sherborne School
Goodhart, Anne Rosemary	Bedgebury Park, Cranbrook
Hanwell, Rachael Joyce	Kesteven and Sleaford High School for Girls
Howard, T. R. G.	Winchester College
Humphrey, E. G.	Heath Grammar School, Halifax
Illing, R. C.	Epsom College
John, W. R. B.	Bristol Cathedral School
Khonje, T. T.	Dedza Secondary School, Nyasaland
Lattimer, N. J.	Sutton Valence School, Kent
McIntyre, I. N.	Chigwell School
Morgan, I. J.	Epsom College
Morgan, Jennifer M.	Bridgend Girls' County Grammar School
Nkazi, G. K. C.	Dedza Secondary School, Nyasaland
Pinkham, R. G.	Hurst Pier Point College
Rose, A. D.	Highgate School
Shelley, D. F.	King's School, Rochester
Soul, J. O.	Collyer's Grammar School, Horsham
Stoneham, J. R.	Harrow School
Sutton, M. G. S.	Highgate School
Ticehurst, P. R.	Uppingham
Turner, L. J.	Magdalen College School, Brackley

2nd Year

Name	School
Ashford, P. D.	Poole Grammar School
Ashworth, J. S.	Accrington Grammar School
Bailey, R. I.	Epsom College
Baxter, R. J.	King's School, Rochester
Bolwell, A. G.	Poole Grammar School
Brander, W. L.	Westminster School
Bridger, M. W. W.	Sherborne School
Campbell, I. T.	William Hulme's Grammar School, Manchester
Church, R. M.	John Port Grammar School
Cochrane, G. McL.	Tudor Grange Grammar School, Solihull
Corbett, G. A.	Queen Elizabeth's Grammar School, Mansfield
Cosgrove, P. V. F.	Repton
Curry, N.	Haileybury
Dare, J. R.	Trowbridge High School for Boys
Dyke, R. R.	Epsom College
Falconer, Alex Margaret	Bromley High School for Girls
Fortnam, Mary E.	Lutterworth Grammar School
Freer, C. E. L.	Radley College
Gordon, I. R.	Allhallows School
Gore, C. R. G.	Dulwich College
Guerrier, P. M.	Bryanston School, Dorset
Harvey, P. M.	Epsom College
Harvey, V. J.	Epsom College
Hudson, C. J.	King's School, Bruton
Hughes, W. C.	Headlands Grammar School, Swindon
Hunt, R. C.	Gresham's School
Janvrin, S. B.	Marlborough
Jolley, D. J.	Wolverhampton Grammar School
Jones, D. B. E.	Holyhead County Secondary School
Jones, R. N.	Jones' West Monmouth School, Pontypool
Kempe-Roberts, Susan V.	Ashford School
Lawrence, Rowena M. F.	Cheltenham Ladies' College
Laws, Judy M.	Lawnswood High School, Leeds
Leyshon, A.	Poole Grammar School
Matheson, A. C. W.	Lancing College
Moore, Alison E. J.	Queenswood, Hatfield
Naylor, B.	Bradford Grammar School
Ogilvie, D.	Birkenhead School
Ong, C. S.	Victoria Institution, Kuala Lumpur
Owen, W. J.	Llandovery College
Payne, J. G.	Grove Park Grammar School, Wrexham
Pike, W. J.	John Port Grammar School, Derbyshire
Proud, J. G.	Queen Elizabeth's Grammar School, Darlington
Ramage, P. C. V.	St. Joseph's College, Ipswich
Rowlands, B. J.	Wirral Grammar School for Boys

Name	School
Seifert, Ruth	Frances Mary Buss Foundation Camden School for Girls
Sharpe, Margaret E.	Charlton Park School, Cheltenham
Siggers, S. H.	Marlborough College
Smith, R. S.	Dixie Grammar School, Market Bosworth
Taylor, R. C. H.	Charterhouse
Turner, Jacqueline S.	James Allen's Girls' School, Dulwich
Turner, D. T.	Whitgift School, Croydon
Vale, J. A.	County Grammar School, Altrincham
Walker, A. K. Y.	Methodist College, Belfast
Warren, P. D.	Sir John Leman School, Beccles
Webb, J. R.	Tonbridge School
Weir, I. K.	Dulwich College
Wheeler, J. G.	St. Edward's School. Oxford
Whitmore, I. V.	Taunton School
Wiggins, W. J.	Rugby School
Willard, C. J. C.	Tonbridge School
Williams, R. A.	Lewis School, Pengam
Williams, V. G.	Sevenoaks School
Young, P. M.	Tonbridge School

Combined Course Students, 1963

Name	School
Greenwood, L. F., Miss	Guy's Hospital Dental School and Christ's Hospital
Leopard, P. J.	Guy's Hospital Dental School and Penarth Grammar School, Glamorgan
Rowe, R. C. G.	Guy's Hospital Dental School and Christ's Hospital
Williams, J. L.	Guy's Hospital Dental School and Christ's Hospital

Clinical Students

Name	College
Bethell, H. J. N.	St. John's College Cambridge, and Tonbridge School
Bevan Jones, A. B.	Queen's College, Cambridge, and Malvern College
Boulton Jones, J. M.	Trinity Hall Cambridge, and Marlborough
Bowen-Simpkins, P.	Selwyn College, Cambridge, and Malvern College
Corr, Miss D. A.	Newnham College, Cambridge, and High School, Brockenhurst
Day, R. C.	Trinity College, Cambridge, and Dulwich College
Dunham, A. M., Miss	New Hall, Cambridge, and South Hampstead High School
Enderby, D. H.	St. John's College, Cambridge, and Haileybury
Eraut, C. D.	Trinity Hall, Cambridge, and Bedford School
Falcon, M. G.	Trinity College, Cambridge, and Tonbridge
French, M. E.	St. John's College, Cambridge, and Edinburgh Academy
Jefferson, J. M.	University College, Oxford, and Royal Grammar School, Newcastle
Lindop, M. J.	Gonville and Caius College, Cambridge, and King Edward's School, Birmingham
Machin, G. A.	Magdalen College, Oxford, and King's College, Wimbledon
Nicholson, J. E. R.	Wadham College, Oxford, and Marlborough
Penney, C. C.	Gonville and Caius College, Cambridge, and Cranleigh School
Powell-Jackson, J. D.	Gonville and Caius College, Cambridge and Brighton, Hove and Sussex Grammar School
Randell, P.	St. John's College, Cambridge, and Chichester High School and Lewes Grammar School
Ransley, P. G.	Gonville and Caius College, Cambridge, and Northgate Grammar School, Ipswich
Robinson, R. D.	King's College, Cambridge, and Bedford School
Stoutt, R. B.	Peterhouse College, Cambridge, and Cheltenham College
Worthington, S	Clare College, Cambridge, and Rugby

DENTAL SCHOOL

1st Year B.D.S. Students

Name	School
Band, K. R.	Oundle School
Bates, M.	Queen Elizabeth's Grammar School, Mansfield
Beale, D. A.	Bedford School
Bennett, A. P.	Aldenham School
Brown, A. E.	Sir Joseph Williamson's Mathematical School, Rochester
Cook, J. E.	Newton-le-Willows Grammar School
Fairweather, Jean R.	Ilford County High School
Gill, W. G.	Bury Grammar School
Hodgkison, A. J.	Enfield Grammar School
Lewis, Patricia M.	Ardwyn Grammar School, Aberystwyth
Loomes, R. S.	Slough Grammar School
Pinckney, R. C. N.	Plymouth College
Roberts, M. N. D.	Downside School
Stephens, A. S.	Bishop Vesey's Grammar School, Sutton Coldfield
Wood, J. F.	St. Joseph's College, S.E.19.

2nd Year B.D.S. Students

Name	School
Abels, Jane M. E.	Queen Victoria High School, Stockton-on-Tees

Name	School
Ballentyne, J.	King Edward VI *Grammar School*, Chelmsford
Barker, G. R.	Bishop Vesey's Grammar School, Sutton Coldfield
Beacham, R. J.	St. David's College, Bristol
Bishop, M. G. H.	St. Lawrence College, Ramsgate
Bowen, R. J.	Hornchurch Grammar School
Brown, D. R. B.	Whitgift, South Croydon
Brown, G. H. R.	Epsom College
Carr, A. J.	St. Bartholomew's Grammar School, Newbury
Clift, M. S.	Maidstone Grammar School
Deathridge, J. W.	King Edward's School, Birmingham
Dewsnap, R.	Bolton School
Dowsett, A. J.	Surbiton County Grammar School
Dowsing, T. G.	King Edward VI *Grammar School*, Stourbridge
Doyle, C. M.	Slough Grammar School
Dufton, J. F.	Finchley Grammar School
Eaton, K. A.	Warwick School
Foulds, D. C.	Alleyn's School, S.E.22.
Froom, A. R.	Trinity School of John Whitgift, Croydon
Gaskell, Joan C.	Crewe County Grammar School
Gebbie, C. J. M.	Tonbridge School
Godfrey, A. E.	Penarth Grammar School
Halestrap, D. J.	Blundell's School, Tiverton
Ham, M. L.	Cardiff High School
Hargraves, J.	Hardye's School, Dorchester
Holmes, J. L.	Bablake School, Coventry
James, M. J.	Bishop Vessey's Grammar School, Sutton Coldfield
Jarvis, Anthea C.	Ashby-de-la-Zouch Girls' Grammar School
Jones, R. S. G.	St. Julian's High School, Newport, Mon.
Mace, M. C.	St. Dunstan's College, Catford
Martin, T. P.	Newport High School, Monmouthshire
Miller, Carol A.	Ashford School for Girls, Kent
Murphy, Pauline F.	Howell's School, Llandaff
Nkurukenda, Y. M.	St. Mary's College, Kisubi, Uganda
Orlans, S. M.	Portsmouth Grammar School
Phillips, A.	Dynevor Secondary Grammar School, Swansea
Poole, S. J.	Soham Grammar School, Cambs.
Porter, F. R.	Hymers College, Hull
Reed, A. A. D.	King Edward's School, Birmingham
Richmond, M. F.	Cardiff High School
Ritchie, J. G.	Sir Anthony Browne's School, Brentwood
Robertson, I. C.	Hymers College, Hull
Robson, J. S.	Roan School, S.E.3.
Salt, R. H.	The Grammar School, Chipping Sodbury
Sayles, Lesley J.	Wymondham College, Norfolk
Shaw, J. K.	Westfield *Comprehensive* School, Sheffield
Skuse, J. K.	St. Albans School
Smith, Patricia E.	Alexandra Grammar School, Singapore
Speake, W. G.	*Truro School*
Stevens, D. M.	Christ's Hospital
Tanner, Anne C. R.	Putney High School
Taylor, A. P.	Bedford Modern School
Townsend, M. R..	Wellington College
Webb, R. D.	King Edward VI Grammar School, Chelmsford
Wilson, R. M..	King Edward VI *Grammar* School, Chelmsford
Wilson, Elizabeth H.	Harrogate Grammar School

NURSING NEWS

Entered

Sister M. Atkinson to Cornelius.
Sister C. Boyce (née Pelham-Braithwaite) to School of Nursing.
Sister Van Breda to School of Nursing.
Sister G. Parsons to Nurses' Home.
Sister J. Roberts to Sarah.
Staff Nurse Eveleigh to Radiotherapy Department.
Staff Nurse J. Foulkes to Theatres.
Staff Nurse K. L. Hunt to York Clinic.
Staff Nurse M. Kelly to Evelina Hospital.
Staff Nurse R. Sims-Reeve to Nuffield Theatre.
Staff Nurse A. Stephens to Evelina Hospital.
Staff Nurse W. Weston to York Clinic.

Left

Sister B. Warne from School of Nursing.
Staff Nurse J. Cavendish from Radiotherapy Department.
Staff Midwife S. Meacher from Nuffield D.
Staff Nurse F. Wilson from Theatres.

PAPERS BY GUY'S MEN

Anderson, D. J. Examination methods. *Brit dent. J.* 1963, **115**, 199.

Brock, Sir Russell. Late arterial embolectomy. *Brompton Hosp. Rep*, 1962, **31**, 186.

Crook, J. C. Acetylcholinesterase activity of capillary blood vessels in the central nervous system of the rabbit. *Nature*, 1963, **199**, 41.

Humphrey, D. C. Localized accidental vaccinia of the vulva. Report of 3 cases and a review of the world literature. *Amer. J. Obstet.* 1963, **86**, 460.

Levitt, H. N. Public health and general practice. *J. roy. Inst. pub. Hlth.*, 1963, **26**, 6.

Levitt, H. N. Mental health in general practice, in Symposium *Mental Health*, Scottish Association for Mental Health, Edinburgh, *1963*.

Rees, R. J. W. and another. Changes in the morphology of *Mycobacterium leprae* in patients under treatment. *Internat J. Leprosy*, 1962, **30**, 266.

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Editors *W. G. Reeves*
T. C. Davis

Sports Correspondent *E. Tiller*

Guy's Hospital, London

PASSIM

If one walks down Regent Street, through the lights of Piccadilly Circus and Leicester Square and out into a Trafalgar Square cluttered with pigeons and causes, there has been much launched at one. There has been the invitation to view Leonardo, to listen to Weber, to try on Dior, Amies or Michael, to watch Visconti and much more. In fact, we have met the frighteningly attractive face of advertising and probably we have not realised it. Advertising has intruded into our lives nearly to the point where we can think in terms of egg-cups when buying coal and square dances when buying cameras: but we still retain the prerogative to choose, or at least we think we do. However, the resourcefulness and immediate appeal that advertisement makes may serve to obscure and sometimes even blot out our pleasure in the thing itself. One wonders whether we can really appreciate a glass bowl when we know that it has been manufactured. Are the material adjuncts of a mechanized society too imposing for us to recognise and appreciate the beauty in a painting, or perhaps more important, to know why it was painted at all? By now we may have lost the vigour of inventiveness and its accompaniment, immediate reaction.

Matthew Arnold described one of Wordsworth's early poems as " Sheer, bare penetrating power." Today a critic may talk glibly in these terms but we are sure the response to the same would not be in such bold but rash English. Thus we take for granted all forms of self-expression and the more bizarre the arrangement it can take for itself, the more firmly are we to push it quietly from us.

To a person who is not living within the organized clamour of modern life, self-expression is not taken for granted. Many patients in mental hospitals find much joy and help in painting, gardening, music or cooking. They can release much hurt from their tortured minds and by so doing help their doctors to understand them better and to prepare them for the life outside. For a patient in a mental hospital there is little to cheer him, but he is not subject to the added strain of bombardment by placard and hoarding and can listen to music, or dance and sing with an immediacy and perhaps satisfaction that most of us would find difficult. This range of self-expression is naturally limited by environment, finance and personality, but within many mental hospitals to-day there exist departments for creative therapy which are integrated into the life of the community and which are malleable and growing.

At one hospital there was a young man of about 35 years of age; he was a schizophrenic who would stay quietly by himself throughout most of the day. He rarely spoke and more rarely took part in any activity. A shambling mockery of a young life. After a little while he began to paint, methodically and flatly, but with much colour. He never covered a canvas and never put a human being in his work. After a few weeks he produced a picture of a park in Spring, with the flowers and trees coming alive with colour and sunshine. Again, there was no person in it and his teacher, for the first time, asked him why?

The people might pick all the flowers," he replied. While we smile at his aphorism we ought to realize that we have now learned something about Bernard. He is a person who reacts to his environment in a strange way but we now have an understanding of how he feels about something and can relate our understanding and treatment more nearly to him.

The part that creative therapy has to play in the adjustment and support of mentally ill patients is a large and fascinating one. Many more examples could be given in the realms of music and drama but we hope in the near future to present articles in the *Gazette,* where people working in these fields can give us more insight into their work and their motivation.

Identities restored

With the help of several readers who have replied to our appeal of a month ago, we are now able to publish the identity of three of the four anonymous busts of past Guy's men rescued from the ruins of the old East wing. These photographs appeared on page 474 of the *Gazette* of 21st September, and their captions should now read as follows: *Figure* 3—Peter Horrocks, *Figure* 4—Sir James Goodhart, *Figure* 6—William Hunt, and *Figure* 2—as yet unidentified.

Peter Horrocks was appointed Assistant Physician to the Department of Obstetrics and Gynaecology in 1883, following the retirement of Braxton-Hicks, and he was among the first to perform Caesarian section with a low mortality rate. He found his relaxation in various ways and when time permitted used to propel a tricycle along the roads of Kent. Later he became an ardent mountaineer and it was during an Alpine expedition that he had an extremely narrow escape, which was reported with intricate diagrams in the daily press and *Gazette* of 1884.

Sir James Goodhart was both an Assistant Physician and Lecturer in Pathology. In 1891 he diagnosed the first case of congenital pyloric stenosis recognised at Guy's and sent the specimen to the museum. He was at one time deputy to Sir William Gull and later became "the most sought-after consultant in London".

William Hunt was a Governor of Guy's, who on his death in 1829 left about £180,000 for the enlargement and extension of the Hospital. Later, hop warehouses were converted into temporary wards and christened Hunt's House.

Some of this information has been culled from the pages of *Mr. Guy's Hospital**, by H. C. Cameron—a fascinating treatise on the very fluctuant history of Guy's which we would warmly recommend to those as yet unacquainted with it.

It seems, however, that the guessing game is not over. For the identity of the four heads built into the façade of Keat's House is still a controversial issue and rumour has it that the bust residing peacefully in the Medical School over the label of Richard Bright does, in fact, represent someone else. No doubt the consequence of hasty removal before one of the perennial rag day invasions.

*Published by Longmans, Green and Co., 1954.

Mr. F. W. LAW - *An Appreciation*

The retirement of Frank Law after twenty-nine years as Consultant Ophthalmic Surgeon to Guy's Hospital, will come as a considerable surprise to the majority of those who know him, for it is difficult to realise that the time has now come for him to relinquish his hospital appointment.

His medical career started at Cambridge University (where he rowed 2 in the 'Varsity Boat) but prior to this he served in the Royal Field Artillery in France and Flanders throughout 1918 and 1919. He completed his undergraduate studies at the Middlesex Hospital, where he held resident appointments in 1926 and 1927 and thereafter spent two years as Senior House Surgeon and Senior Resident Officer at Moorfields Eye Hospital, where he later became Pathologist and Curator.

His first consultant appointments were at Paddington Green Children's Hospital and the Central London Ophthalmic Hospital, but he was later appointed to the consultant staff at Moorfields Eye Hospital and Guy's.

In addition to being an exceptionally skilled ophthalmic surgeon, his surgical teaching is more than matched by his clinical acumen and his ability allied to an inexhaustible capacity for hard work soon gained him a widespread recognition not only in England but also throughout the Continent and the United States.

At home his merit has been recognised by an almost unparalleled list of honorary appointments and honours, of which only a few need be mentioned. He has been Past President of the Faculty of Ophthalmologists; a Master of the Oxford Ophthalmological Congress and President of the Ophthalmological Society of the United Kingdom. He was also General Secretary of the International Ophthalmological Congress during the outstandingly successful meeting held in London in 1950 in addition to being a member of the International Ophthalmological Council and President of the International Association for the Prevention of Blindness.

As a Cambridge Rowing Blue it was not surprising that he took an active interest in hospital rowing activities and he was President of the Guy's Hospital Boat Club for several years.

Frank Law is a man of varied and wide interests. A fine shot and an enthusiastic and skilled fisherman, he is in addition a musician of no mean merit and in his all too few moments of leisure he is a keen and active member of a choral society.

Apart from his professional achievement it is perhaps as an after-dinner speaker that he will be particularly remembered by many of his colleagues and contemporaries for in that field he is in a class of his own and as one would expect from a man of such accomplishments he is widely known as a most delightful and entertaining host and companion.

The termination of his close association with Guy's and Moorfields will be universally regretted, for he will be greatly missed by both hospitals and he will certainly not be forgotten.

GUY'S DIARY

OCTOBER

EXHIBITION. *"Burns".*

22nd	T.	1.00	Professor ATKINS. Clinical Lecture. *Acute Appendicitis.*
24th	Th.	1.00	Professor POLANI. Clinical Lecture. *Medical Palmistry.*
25th	F.	1.00	Dr. KAUNTZE. Clinical Lecture. *Peptic Ulceration.*
26th	S.	10.00	Clinico-Pathological Meeting. Clinical Theatre.
28th	M.	1.00	Dr. BAKER. Clinical Lecture.

The Presidential Address of the Dental Society will be given by Mr. A. H. R. Rowe on Tuesday, 29th October, at 5.15 p.m., in the Dental Theatre. His subject will be 'By Root Canal to America'.

School of Nursing Prize Giving

The annual presentation of prizes and medals took place on Wednesday, September 18th. The Physiology Theatre, kindly lent by Professor Hunt, was well filled. Mr. Slesinger presided in the absence of Lord Cunliffe. Matron

spoke first, giving her report on the hospital during the past year. Among other points she noted how fortunate the trained staff were in obtaining postgraduate experience, and reported that no less than 30 people had taken postgraduate courses during the past year. The principal sister tutor then gave a report on the work of the School of Nursing during the year followed by Sister Stevenson, who reported on the new Obstetric Scheme. Miss Compton, the Lady Superintendent of the Evelina Hospital, concluded the reports with an account of the year's work at the Evelina Hosptial.

The prizes and medals were then presented by the Right Reverend the Lord Bishop of Guildford.

The Bishop's address followed. He started by thanking the nurses for their presentation of "a brick" for his cathedral instead of the more usual bouquet. He then went on to explain how particularly well qualified he was to give away prizes in a School of Nursing, listing among other qualifications a wife who is a Doctor (they are known in the diocese as " body and soul"), an operation for partial gastrectomy and a hernia (on the Epistle side). After this fascinating opening, he came to the main point of his address which consisted of three pieces of advice for nurses. Firstly that any hospital exists only for the " man in the end bed". Secondly that nurses should make every effort to become whole people, interested in all that was going on outside the hospital so that they might be more aware of the spiritual needs of their patients and more able to give their patients spiritual comfort and support. Finally nurses should always care deeply for their patients. Following the Bishop's address, Mr. Blaikley gave the closing remarks in which he suggested among other things that even when one got past the age of receiving prizes, it did no one any harm to receive a " pat on the back " from time to time.

The vote of thanks to the Bishop was then proposed by Miss Helen Hague.

B. B. WHYTE.

MEDALS FOR 1963

Cazenove Gold Medal—Miss H. HAGUE.
Cazenove Silver Medal—Miss G. GLOVER.
Cazenove Bronze Medal—Mrs. V. ADAMSON (née Wild).
The Jean Morton Award—Miss E. PIPER.
The Emily MacManus Prize—Miss A. MACEWAN SMITH.

Butterworth Medals awarded for Long Service

Miss JEAN ANDREWS.
Miss ANN MOSS.
Miss UNA TILL.

PRIZE-WINNERS, 1962—1963

GUY'S HOSPITAL SCHOOL OF NURSING.

Mrs. V. ADAMSON.
Miss S. BONEHAM.
Mrs. V. CLAXTON.
Miss I. CLEGHORN.
Miss P. CONNOLLY.
Miss H. COWLEY.
Miss S. FOY.
Miss J. FYFE.
Miss G. GLOVER.
Miss M. GROOM.
Miss H. HAGUE.
Miss J. HARTREY.
Miss J. ISHERWOOD.
Miss C. PAGE.
Miss R. PARKER.
Mrs. B. PEARCE.
Mrs. R. PEARSON.
Miss E. PIPER.
Miss C. PONTIN.
Miss M. RADGE.
Miss D. JONES.
Miss A. KESTERTON.
Miss M. KNIGHT.
Miss J. MARKWICK.
Miss D. MARTIN.
Mrs. A. MCNEIL.
Mrs. P. RAYWOOD.
Miss F. ROWLEY.
Miss P. SCOTCHMAN.
Miss A. SEYMOUR.
Miss E. SHEPPARD.
Miss A. MACEWAN SMITH.
Mrs. C. WARD.
Miss H. WARD.
Miss J. WATERS.
Miss B. WHITE.
Miss C. WILSON.
Miss H. WOOD.

EVELINA CHILDREN'S HOSPITAL OF GUY'S HOSPITAL SCHOOL OF NURSING.

Miss J. GLOVER.
Miss L. MANSIE.
Miss D. PURVES.
Mrs. M. WILSON.

The Genetics and Biochemistry of Drug Resistance in Bacteria

by R. KNOX
Professor of Bacteriology

The resistance of micro-organisms to drugs or antibiotics may occur in several ways. The term resistance itself is to some extent arbitrary. A micro-organism is described as resistant to a particular drug or antibiotic if it is able to grow or survive in the presence of concentrations of the drug which can easily be reached in infected tissues. The concentration which may inhibit growth in the test-tube does not necessarily tell us whether the drug is likely to be effective in clinical use. With some species of micro-organism resistance to drugs or antibiotics may be described as "natural". The tubercle bacillus is described as naturally resistant to penicillin, as are many coliform organisms and other Gram-negative bacteria. Acquired resistance can arise in several ways. A full understanding of the ways in which this may arise will only become possible when we know a great deal more than we know at present about the genetics and biochemistry of micro-organisms. Knowledge of this has been advancing rapidly in the last few years and indeed the study of drug-resistant bacteria by biochemical and genetic techniques has proved to be one of the growing points in the biological sciences. An attempt will be made here to outline these and also to touch briefly on the clinical and epidemiological ways in which drug resistance in bacteria may manifest itself.

In principle the genetics of drug resistance in bacteria are fairly straightforward. In any given bacterial population as in probably all forms of living matter there exist a small number of cells genetically different from the average. These are known as mutants. In the absence of the drug, mutants only appear in very small numbers and they are all heavily outnumbered by the normal cells which perhaps are better fitted for the environment in which they find themselves, for example, in an abscess or in some other infected site, but the use of the drug upsets this equilibrium, and the organisms sensitive to the drug are destroyed by it or at least prevented from multiplying, leaving the field clear for the resistant mutants which up till now had been holding on precariously. If these mutants are fairly frequent then resistance of the bacterial population may arise quickly. If they are rare then resistance may arise very slowly. With streptomycin, for example, resistance arises rapidly with coliform organisms and even with tubercle bacilli, simply as the result of elimination of sensitive

organisms. Penicillin resistance arises much more slowly and even with the notorious hospital staphylococcus the evolution of penicillin resistant strains initially was not a rapid process. But whether it be slow or rapid the acquisition of drug resistance in micro-organisms originally sensitive to the drug can very largely be explained on the hypothesis of natural (or unnatural) selection with the help of the antibiotic.

The other extreme is an entirely different type of response. It has been recognized for many years now that bacteria can frequently adapt themselves to their environment not by the selection of mutants more suited to the new environment but by biochemical changes resulting in an altered metabolism, or by the production of new enzymes in direct response to changes in environment. In the field of antibacterial drugs an excellent example of this and indeed almost the only example is the production of penicillinase by staphylococci. Some strains of staphylococci when exposed to a low concentration of penicillin are able to synthesize by an adaptive response greatly increased amounts of penicillinase, an enzyme which they contain normally in a low concentration. Such strains, once they have synthesized this enzyme in increased amounts, are able to destroy large quantities of penicillin as soon as they are exposed to it. It is important to note that not all strains of staphylococci are capable of doing this—only those which are genetically so constituted that they have the capacity to produce this enzyme are capable of responding in this way. Thus the evolution of the hospital staphylococcus can be explained as the result of a combination of genetic selection of mutants and biochemical adaptation on the part of these mutants. The new penicillins, methicillin and cloxacillin have proved effective against these staphylococci because they are not appreciably destroyed by penicillinase.

The mechanism by which resistance arises in bacteria has a profound influence in determining the clinical consequences of drug resistance. Theoretically, if resistance of a drug could be induced solely by exposure of micro-organisms to the drug the resistance would persist so long as the drug was in use but would disappear when treatment was stopped. But probably with the single exception of the induced formation of penicillinase with staphylococci this never occurs in practice and the drug resistant strains which have arisen clinically have arisen as the result of selection of a small minority of resistant mutants. This means, of course, that when the drug is withdrawn there is no reason why resistant organisms should disappear, since resistant mutants once selected will go on multiplying and remaining resistant in the absence of the drug. Thus isoniazid resistant tubercle bacilli once selected by the use of isoniazid may go on multiplying in the absence of the drug not only in the original patient but also in other patients possibly infected from him. Thus the prospects of micro-organisms becoming sensitive to a drug once resistance has appeared would seem to be rather gloomy. Against this, however, must be set the fact that in some cases at least sensitive organisms may come back again as the result of the change in environment

produced by abandoning the use of a drug. Any sensitive organisms which may have survived the period of treatment are now perhaps better fitted for survival in a drug-free environment than the drug-resistant organisms selected by it; and so a gradual swing back to a sensitive bacterial population does in fact occur. But this can be a slow process and it is by no means certain that it always occurs. In many cases it certainly does not; and isoniazid or streptomycin resistant tubercle bacilli once selected can prove to be remarkably persistent even in the absence of the drug.

The epidemiological aspects of drug resistance are also of great interest. From the point of view of prevention and treatment it is important to know the epidemiological origins of drug-resistant strains. If the resistance in a bacterial culture arises in the course of treatment of a single patient then all our efforts should be devoted to insuring so far as we can that conditions are not favourable for this resistance to develop at all. It is for this reason that in the treatment of tuberculosis we use two drugs or even three rather than one, since the chances of tubercle bacilli resistant both to streptomycin and isoniazid arising are very much less than the chances of tubercle bacilli resistant to only one of these arising. In many cases, however, it is clear that resistant strains do not arise in this way at all, but simply by direct infection of patients or carriers from patients or carriers in whom already resistance had developed. Thus the problem is a problem of cross infection and of hygiene and not at all of pharmacology or biochemistry. The fact that the so-called resistant staphylococcus is able to destroy penicillin by means of its penicillinase explains how it is that once these strains have been selected they are able to spread rapidly through the hospital population and the rapidity of their spread reflects breakdown in hospital hygiene rather than any peculiar properties of the strains apart from its ability to destroy the antibiotic when it meets it.

NOTICES

Dental Society Ball

May I notify those of your subscribers, contributors and readers who have not yet made application, that the year's foremost social function has been arranged for the evening of Friday, 22nd November, 1963, at the Cafe Royal.

Further advertisement, by way of hand-bills, posters and writing on the wall, will appear in due course.

MALCOLM J. BURKE,
for Dental Society.

Art Exhibition

Entries may be left in the technician's room (basement of Gordon Museum) between October 21st and 25th, and should be collected between November 11th and 15th.

Everyone is welcome to exhibit, and to visit the Exhibition from October 28th to November 9th, in the Gordon Museum.

J. R. TOWNSEND,
Hon. Secretary.

D H. LAWRENCE — *The Ship of Death*

by P. M. A. BOWDEN

Lawrence's prose and poetry was of himself, his aspirations, his fears and life. Attempts at fabrication were obvious and his writing was, with few exceptions, autobiographical. Throughout his life he built his "Ship of Death", this being the title of one of his last and most poignant poems. It begins:—

> *"Now it is autumn and the falling fruit*
> *and the long journeys towards oblivion.*
>
> *The apples falling like great drops of dew*
> *to bruise themselves an exit from themselves.*
>
> *And it is time to go, to bid farewell*
> *to one's own self, and find an exit*
> *from the fallen self."*

Quotations from his work tell most accurately of the tragedy that began on September 11th, 1885, when a son was born to a collier's wife. He was their fourth child and it was an inopportune birth. The child's parents were incompatible in more than social background, *"she was too much his opposite"*. However, *"with all her force and with all her soul"*, she was to make up to the child for having brought it into the world unwanted. *"The unhappy woman beat about her for insatiable satisfaction, seeking whom she may devour she turned to her child, throwing herself into a last great love for her son, a final fatal devotion."* This was the background in which he grew, the focus of a possessive mother and a soulless father. He described himself as *"the sort of boy that becomes a clown and lout as soon as he is not understood, or feels himself held cheap; and, again, is adorable at the first touch of warmth."* In one of his earliest poems he echoes what he must have heard on many occasions after his father had returned from a bout of drinking:—

> *"Within the house two voices arose, a slender lash*
> *Whistling she delirious rage, and the dreadful sound*
> *Of a male thong booming and bruising, until it had drowned*
> *The other voice in a silence of blood, 'neath the noise of the ash."*

Lawrence later judged his father harshly and it should be remembered that he was a collier on whom the family were wholly dependent. He was frequently injured.

> *"I do 'ope as it's not so very bad!*
> *Eh, what a shame it seems*
> *As some should ha'e hardly a smite o' trouble*
> *An' others 'as reams!*
>
> *There's one thing, we s'll 'ave a peaceful 'ouse f'r a bit,*
> *Thank heaven for a peaceful house!*
> *An' there's compensation, sin' it's accident,*
> *An' club-money— I won't growse."*

During an illness at the age of 16 he experienced an event that was

to affect his life. It is recorded in "Sons and Lovers": "*Paul was very ill. His mother lay in bed at nights with him; they could not afford a nurse. He grew worse and the crisis approached. One night he tossed into consciousness in the ghastly, sickly feeling of dissolution when all the cells in the body seem in intense irritability to be breaking down and consciousness makes a last flare of struggle like madness, 'I s'll die mother!' he cried, heaving for breath on the pillow. She lifted him up, crying in a small voice, 'Oh, my son, my son!' That brought him to. He realised her. His whole will rose up and arrested him. He put his head on her breast and took ease of her for love.*" His sensitivity must have been stunned by this Oedepidian incident, it is understandable that he should later declare, "*You will not easily get a man to believe that the carnal love he has for his wife is as high a love as that he felt for his mother.*" After the illness, Lawrence met Jessie Chambers, *Miriam* of "Sons and Lovers", she recognised his genius and fell in love with him but then the force of the ties binding him to his mother became apparent. For four years he taught miners' children and at twenty-one he went to Nottingham University, where he obtained an M.A. He then taught in an elementary school at Croydon for two years. Jessie copied out his poems and sent them to The English Review, where they were published in 1909.

The relationship with Jessie became unsatisfactory and he took up with Helen, who, "*could simply numb one with sex and hate because of it. So I was baulked again.*" Then occurred, "*The great crash,*" his mother died. "*'Mother!' he whimpered—'mother!' She was the only thing that held him up, himself, amid all this. And she was gone, intermingled herself. He wanted her to touch him, have him alongside with her.*

"*But no, he would not give in. Turning sharply, he walked towards the city's gold phosphorescence. His fists were shut, his mouth set fast. He would not take that direction to the darkness, to follow her. He walked towards the faintly humming, glowing town, quickly.*" There is hope here but it was transitory, he was too attached to his mother and Lawrence painfully followed her. Jessie herself wrote of her conversation with Lawrence at this time: he said, "You know, J., I've always loved mother!" "I know you have," I replied. "I don't mean that," he answered. "I've loved her—like a lover—that's why I could never love you." He had a second series of attacks of pneumonia after attempting to renew the relationship with Jessie but he had taken her knowing that he had no love, he was guilty of sensuality. "*Sexuality is good, sensuality evil.*" And his mother?,

> "*My love lies underground*
> *With her face upturned to mine*
> *And her mouth inclined in the last long kiss*
> *That ended her life with mine.*"

In 1912, Lawrence left for Germany to see the woman, who was already married, that he met in England. Sometime later he married her but after only a brief glimpse of happiness he realises,

> "*I could not be free,*
> *not free myself from the past, those others*
> *and our love was a confusion.*"

He continues in pathetic terror at his predicament,

" Do not leave me or I shall break.
Do not leave me. . . ."

The situation was insufferable to him, he realises his inability to give his wife the fulfilment that he needs from her and his wounded pride cries,

" I
A WOMAN has given me strength and affluence
Admitted. . . ."

" . . . it wounds me to death with my own not being ;
definite, inviolable limitation."

After his mother's love, his sin with Jessie and his insufficiency in marriage, Lawrence turns his back on love and declares,

" I am worn out
With the effort of trying to love people
And not succeeding,"

and looking back on the tragedy that was his life he later says,

" When a man can love no more
and feel no more
and desire has failed
and the heart is numb
then all he can do
is to say: " It is so."

"And she hated him, because he depended on her so utterly . . . he went on from day to day in a blankness of rage and shame and frustration. How he tortured himself in an attempt to get away from her. But he could not. She was a rock on which he stood, with deep, heaving water all around and he was unable to swim." Was his wife the sea of which he wrote? :

"You are single, you are fruitless, phosphorescent, cold and callous,
Naked of worship, of love or of adornment. . . ."

Lawrence tried to find the origin of his torment in his wife but she replied in furious hate, *" You! You truth lover! You purity monger. It stinks, your truth and purity . . . obscene and perverse. You and love! You may well say you don't want love. No, you want yourself and dirt and death."* So, now, he wonders if he can find spiritual fulfilment in a man, another kind of love. *"Suddenly he saw himself confronted with another problem—the problem of love and eternal conjunction between two men. Of course this was necessary—it had been a necessity inside himself all his life—to love a man purely and fully."*

In 1917 he moved to the coast of Cornwall, where a persecution mania developed due to his German connections and the fact that one of his books had been rejected as unsuitable for publication. In October, 1919 he left for Italy. And his home,

" England looked like a grey dreary coffin
Sinking in the sea behind, with her dead
Grey cliffs and the white, worn-out cloth of snow above."

He found transient contentment in Italy, where he entered a Benedictine monastery at Monte Cassino. He was trying to find the truth in himself but only lasted two days. It was a place where *"the Middle Ages*

live on in a sort of agony and cannot die, this was almost a violation to my soul, made almost a wound!" From here he sailed to Sicily, where he attempted to formulate a philosophy by saying that his poems and novels were merely a transcription of emotional experience, his self-analysis being an inference from his work. The creed he developed was what Lawrence wanted the world to learn from him, *"there is only one clue to the universe: that is the individual soul within the individual being. Idea and ideal must grow out of the individual life, not be imposed on it."* He saw the true picture of human existence in the Aztecs and Redskins, mechanised America typifying the *"pretentious evasion"* of the modern world. He tried to find the *"natural"* behaviour of men in Italy, Sicily and Sardinia but failed, so he decided to go to Mexico via Australia. It was 1922. In Australia he writes of sublime spiritual association between men, this was the only hope left for him, he was,

". . . in the long, long fall revolving upon himself
in the endless writhe of the last, the last self-knowledge
which he can never reach till he touch the bottom of the abyss
which he can never touch, for the abyss is bottomless."

His wandering were not without purpose for he was trying to find a society in which his philosophy could become a prophesy; he continued on to America, but there, *"we are doomed, doomed. And the doom is in America. The doom of our white day." "Boom! . . . To use the words of Jesus, IT IS FINISHED, consummatum est."* Lawrence's soul has completed its spiral to its masochistic death and an abortive return to England resulted in him saying, *"I don't hate men because they're men as nuns do. . . . I only wish with all my soul that some men were bigger and stronger and deeper than I am."* Lawrence identifies himself with Jesus, the two thieves of *"the abominable trinity on Calvary,"* being his wife and mother. He writes of His resurrection and union with Mary Magdalene who bears His child. Lawrence believed that Jesus failed in that He was childless, so was Lawrence, so in his identification with Christ and postulation of resurrection, he hoped that he, too, would rise again to succeed in doing that in which he had failed.

"Alas, the spear is through the side of his isolation.
His adolescence saw him crucified into sex,
Doomed, in the long crufixion of desire, to see his consummation beyond himself.
. . . Doomed to make an intolerable fool of himself
In his effort towards completion again."

"Must we hold on?
Or can we now let go?
Or is it even possible we must do both?"

And thus, D. H. Lawrence died of tuberculosis in September, 1930. He was ready for death.

And thus the "Ship of Death" was built and to him, death was a completion as it was to Jesus. He gave literature the greatest gift possible and one that is seldom given by the writer, his naked entirety. He used his powers as a means whereby men might know themselves. He brought nature and mankind together and used his intelligence to light the many

facets of experience that had remained unlit. He did not write of idealism, as an idealist, but showed the reader his struggles towards this goal, sometimes surpassing the limits of reality. But, more than all this, he gave a beauty that was truth,

"And if, as autumn deepens and darkens
I feel the pain of falling leaves, and stems that break in storms
and trouble and dissolution and distress
and then the softness of deep shadows folding, folding
around my soul and spirit, around my lips
so sweet, like a swoon, or more like the drowse of a low, sad song
singing darker than the nightingale, on, on to the solace
and the silence of short days, the silence of the year, the shadow,
then I shall know that my life is moving still
with the dark earth, and drenched
with the deep oblivion of earth's lapse and renewal."

CORRESPONDENCE

Guy's Men Abroad

SIR, I was most interested and extremely pleased to read in the Gazette which reached me to-day that you have started a column containing news of the activities of Guy's folk far afield. I was not aware of this before as the May and June issues in which you first gave notice of this are still tossing about on the seas of the world trying to reach me.

Three weeks ago I returned home from the Cook Islands, and surface mail from the U.K. used to take from three to five months to reach me in Rarotonga.

Since leaving Guy's in 1955 I have worked in some pretty remote and far flung places, but always I have studied the movements of Guy's people in the Gazette to see if any of my old friends and contemporaries were by chance in my vicinity. The information has been somewhat scanty of yore, but I do hope that people will co-operate with you, now that there is a special column, and give information of their activities in the far places of the world.

I recall the pleasure it was to unexpectedly meet a Guy's dentist (of my own vintage) drinking coffee in a shed in the deserts of Somaliland—now the Republic of Somalia; and on another occasion when I spoke to a fellow colleague from Guy's, quite unknowingly and out of the blue, on a telephone in a busy TB clinic in Hong Kong. Again, I remember with gratitude an old Guy's man in a hospital ward in Fiji who had taken the trouble to seek me out.

This only goes to show in a very small way how far flung indeed are those who once walked the wards of Guy's, and I am sure the stories they could relate would be of intense interest to readers the world over.

Of all the places I have worked in, perhaps the most beautiful and the most enjoyable are the Cook Islands, in spite of the problems and difficulties that such a remote and inaccessible region unavoidably presents. During part of my time there I was the only medical officer in the whole of that group of islands, fifteen in all, widely scattered over an area of nearly one million square miles of ocean and supporting eighteen thousand inhabitants. Returning as I did to the South Pacific Islands after an absence of five years, life in my " watery kingdom " had the familiarity of a home-coming. One of my predecessors in this remote outpost was a Guy's man, and I knew that he too must hold many entertaining memories of life in the South Seas.

Yours, etc.,
JOY PURSER.

2, The College, South Cerney,
Cirencester, Glos.

South Africa

SIR, Unfortunately, the man who says something is bad, however unjustified it may be, always seems to be able to command a bigger audience than the man who says something is good, however, justified that may be.

In fairness to South Africa, therefore, and in reply to the report on the talk by Mr. Lang, I now hope you will publish an article of similar length by a good keen Afrikaans speaking South African Nationalist. There is no reason to believe that one will be less truthful than the other.

There is nothing more stimulating than a really biased opinion. We've had one. Now let's have another—from the other side.

The truth will be found somewhere in the middle.

Yours, etc.,

L. B. HILTON.

Mulberry Cottage, Hook Green,
Meopham, Kent.

In answer to the request of Mr. Hilton and others, this series of meetings will now be concluded by a talk from an official representative of South Africa House. This will be held on November 28th.—EDITORS.

Hospital Practice?

SIR, A hospital has a responsibility to contribute to the health education of the community, at least to the extent that is possible with little inconvenience or expense.

Two opportunities are neglected at Guy's for want of a small change in the administration of nursing care.

When the poor state of the nation's teeth is considered, it is surprising that, far from being encouraged to clean their teeth in the evening, those patients confined to bed are greeted with surprise and impatience when they ask for the necessary equipment before going to sleep. This attitude exists also for dental in-patients on the evening before their extractions. The implication is that it is quite harmless to sleep for nine hours with the teeth surrounded by the débris of the last meal.

It is also hard to understand why twenty-four partly infected patients are allowed to sleep in open wards without an open window. There is, especially in New Guy's House, a peculiar reluctance to permit any ventilation; and this is justified by neither the suggested liability of the wards to draughts nor the mysterious fate that apparently befalls nurses who dare wear their cardigans when on night-duty. Surely we need not pander to the British tendency to pack rush-hour trains with glum, smoking, coughing workers swathed in scarves and overcoats in over-heated, opaque-windowed, almost air-tight compartments.

Yours, etc.,

Guy's Hospital, S.E.1. PAUL A. KITCHENER.

John Keats

SIR, To the writing about Keats there is no end, and his bibliography must at least equal that of Dr. Johnsons. However, every article that one reads seems to tell us something fresh, and Mr. Doubleday's is no exception.

The sanctimonious literary critic apart who not long ago applied an ugly four-letter word to Keats' passion for Fanny Brawne, one does not remember, in recent times, seeing deprecatory remarks about Keats. The exception, however, is the late G. H. Vallins, whose little Pan book, "The best English", I have just been reading. Talking about rhyming, he says, "Keats, a slipshod and careless rhymester at the best of times, is a frequent sinner", and then takes him to task for using the word "drains" instead of "dregs" in his ode "To a Nightingale" merely owing to the exigencies of rhyme. Again, he objects to the word "clown" in the same ode, because though "clown" meant a "peasant" in Shakespeare's day, it had long ceased to mean that, and we thus had "an unnatural achaism". Who that loves Keats would ever have thought of these objections which may be valid enough to a pedant. Furthermore, he says later . . . "Keats, a poet who was more justly assessed by contemporary critics than we sometimes care to admit". Again, to lovers of Keats, what infamy, what sacrilege!

Yours, etc.,

Hillside, Midford, Bath. G. L. DAVIES.

Keats at Guy's

SIR,—Most men know that in a previous life Pythagoras had been the Trojan hero Euphorbus and that Empedocles had enjoyed experiences as a fish, a bush, a boy and a girl; but it is not so well known that a metempsychosis recently restored John Keats to our world with his mortal form unchanged. Mr. Doubleday's delightful article prompts me to reveal a few facts about the reincarnate Keats.

In due time Keats sought again to enter Guy's. At the interview things went well, until a member of the Committee asked him what he had been reading lately. "Burton," he blurted out, then bit his tongue, for that member had nearly betrayed him. Seeing that his questioner looked blank, Keats recovered and hastily substituted "Homer". Next he was asked how he had been occupying himself during the summer vacation. Almost he exclaimed—

" Arise! Awake! Clear summer has forth walked
Unto the clover-sward, and she has talked
Full soothingly to every nested finch."

But just in time he cleared his throat and demurely uttered, "Bird-watching."

His questioner persisted, "Do you not sometimes go abroad?" The ardent poet now lost his head.

" Happy is England, sweet her artless daughters;
Enough their simple loveliness for me,
Enough their whitest arms in silence clinging :
Yet do I often warmly burn to see
Beauties of deeper glance, and hear their singing,
And float with them about the summer waters."

"Er, quite so! Does anyone else want to ask Mr. Keats anything?" No one did.

Similar questions were propounded to the next candidate, whose answer to the first was a work on genetics, with another on the social problems of Central Europe, and a modern novel by a foreign gentleman as third. To the second question he replied, "Sailing, swimming and diving." (You *must* dive, or old Freud will eat you. White Burgundy would do it.) Finally, he explained how he had walked through Czecho-Slovakia with only a haversack and a clean shirt, had penetrated to Buda-Pesth and had supported himself for six weeks there as a waiter. *He* became the Guy's man and Mr. Keats a reviewer.

Was the commitee right? I think so. The pure artist seeks the truth through the idea of beauty only. Did not Keats himself lay it down, "Beauty is truth, truth Beauty", and the rest? Science is another way of approaching truth, but only rarely can one head encompass the two. Lucretius is the outstanding example of one who could; but Keats, I believe, had no scientific faculty. In the days of the Regency he was the admirable student delineated so well by Mr. Doubleday's pen; but would he now be as interested as he ought to be in a denosine triphosphate and the metabolism of muscle, or in blood-grouping, or in auto-immunity? Perhaps even in the past the Muse would sometimes whisper in his ear, when he ought to have been listening to Sir Astley Cooper. But how easy, then, to put down the Faerie Queene and pick up the Surgeon's notes! To-day? Keats would encounter an All or Nothing Law. Medicine and Surgery have grown to be enormous, to be hydropic.

Crescit indulgens sibi dirus hydrops.

All research should pause for ten years.

Yours, etc.,

Larch Tree Lodge,
37, Tower Road, Orpington.

H. ST.H. VERTUE.

SIR,—I am anxious to be able to compile a Register of Guy's people who would be prepared to visit elderly Guy's nurses in different parts of the country.

May I request that anybody who would be prepared to volunteer in this way, should let me have their name and address accordingly?

May I, in anticipation, thank those who will come forward.

Yours, etc.,

ANNE M. JOHNSON,
Matron, Guy's Hospital,
and Honorary Secretary Guy's Hospital Nurses' League.

Matron's Office,
Guy's Hospital.

REVIEWS

THE ORGANIZATION OF DIAGNOSTIC X-RAY DEPARTMENTS: TOWARDS A CLEARER VIEW.

Nuffield Provincial Hospitals Trust Report. Oxford University Press. 1962. *Price* 7s. 6d.

The Nuffield Provincial Hospitals Trust have studied the organization of the Diagnostic X-Ray departments at six selected centres, of which two were undergraduate teaching hospitals. The objects of the study were: "(a) To evolve certain fundamental principles on which the organization of X-Ray departments should be based. (b) To recommend how these principles might be applied. (c) To relate the effects of these organizational principles to the design of new departments".

This book reports very fully on their findings and incorporates many valuable suggestions both for the re-planning of existing departments and the designing of new departments. It should certainly be read by any Radiologist concerned with organization of X-Rays and also by Radiographers with similar responsibilities. It is to be hoped that hosptial architects will study it also. Unfortunately, this book has no index and is not convenient as a work of reference. This means that it is only of value to those who will read it as a whole.

T. H. HILLS.

THE DEPRIVED CHILD AND ADOPTION.

by Mary Ellison. Pan Books. Pp. 159. *Price* 3s. 6d.

This little book, written by a London social worker, deals with the problems encountered by children eligible for adoption and those wishing to adopt them.

Mary Ellison first gives a brief account of the historical development of this country's present policy on adoption, and the changes in attitude towards unmarried mothers and illegitimate children, both in England and elsewhere since Biblical times. She then tells of the problems of adjustment between adopted and fostered children and their real or acquired parents within the social and legal framework of to-day. She also deals fully with the complex mechanism of inter-country adoption and the placing of children of different nationalities in the same family. Appendices provide the addresses of all registered adoption societies in Britain, together with reproductions of their regulations and application forms. The legal, social and emotional difficulties encountered in adoption procedures are ably illustrated by stories of numerous cases which the author herself encountered in her work.

The masterly avoidance of sentimentality in recording these cases, together with the use of statistics without creating the effect of a section from a Government report, results in an interesting and informative book. It should be of immense value to any couple contemplating the adoption of a child, and provide stimulating reading for many who are not.

SARAH MARSHALL.

CLINICAL CHEMICAL PATHOLOGY

by C. H. GRAY. Arnold. 1963. Pp. 196. *Price* 16*s*.

The new edition of Gray was long overdue, but the changes that have been achieved have succeeded in making a rather larger yet more comprehensive book. For the student wishing to read a chemical pathology book before finals this is ideal—giving a succinct account with ample references to enlarge one's knowledge. The contents have been modified and drastically revised, with the addition of several chapters and much up-to-date information. The chapter on enzymology is particularly helpful in a complex and little understood subject. The reviewer would suggest that even if the first two editions of this book are already on your shelves that this third edition is a necessity rather than a luxury.

MARK RAKE.

SPORT

RUGBY FOOTBALL

Against a strong Services side at Portsmouth, the Guy's pack produced form far above anything that has been seen this season. They outplayed the Services in all quarters of the field and tackled like tigers. After the game against London Irish, this was indeed an encouraging performance and gave their morale a considerable boost. The side soon adapted themselves to the sticky conditions and relentlessly harassed the Services' backs.

As Cambridge University had been fairly and squarely beaten by Cambridge City a few days' earlier, Guy's visited Grange Road feeling that perhaps they might be able to give the Varsity a nasty fright. Conditions were perfect and the crowd looked forward to a fast, open game. From the initial exchanges it could be seen that the Cambridge backs were keen to throw the ball about while the Guy's pack were content to rely on their touch kicking. The Varsity obviously had some fast thrustful backs and especially Frankcom who, with a fine sidestep, split the Hospital's defence on many occasions. None of the tigerish tackling was seen as in the previous game at Portsmouth and one got the impression that Guy's still imagined that they were playing in muddy conditions. The form-book took another jolt and Guy's finally succumbed 0—29. It is hoped that at Iffley Road, on Wednesday, Guy's will show that perhaps Cambridge are far the stronger of the Varsity sides. D. Biggs is to be congratulated on being re-elected Vice-Captain of the club for the third successive year; he has also been selected to play for Kent, and P. K. Peace has been selected to play for Sussex.

ASSOCIATION FOOTBALL

The club has opened the season with a series of 'friendlies', to sharpen up its tactics and the first major game will be played on Saturday, when it plays the London Hospital at H.O.P. in the preliminary round of the London University Cup. This will be a particularly testing game as the London are the Cup holders and Guy's will need all the support they can muster to cheer them towards the next round.

The club appears to have gained two useful newcomers in J. Powell-Jackson (Sussex Schoolboys and Falcons) and S. Poole (Army Eastern Command and County rep.). Places in the 1st XI will be keenly contested this year, especially as Guy's have seven United Hospitals' representatives in P. Davies, W. Davies, J. Cochrane, J. Cutler, R. Shepherd, A. Atkins and J. Powell-Jackson.

SWIMMING

Water Polo

In the first match of the season Guy's defeated Charing Cross by 13 goals to nil. The first half was a tale of a dominant team unable to take the chances their speed produced. At the change-round the score was 3—0.

In the second half, the team co-ordinated very quickly and goals followed in quick succession. The strength of the team lay in its great all-round speed, thus being able to defend before the oponents could mount an attack.

This game has shown the potential of the team, the subsequent games against King's I and St. Mary's I will test its strength to the full.

Team:—D. Barnes (Capt.), B. Valentine, D. Bartlett, R. Jones, E. J. Siegle.

Goal scorers:—Valentine 4 Barnes 3 Jones 3, Bartlett 3.

Dewrance Cup.—At the Inter-Borough Gala on 19th September, between Southwark, Bermondsey, Lambeth and Camberwell, Guy's won the Challenge Cup for Hospitals in these Boroughs. The event was 3 x 1 length Medley relay and after a close first two lengths B. Valentine took the last to win by three yards.

Team.—T. Johnson, J. Holland, B. Valentine.

CROSS COUNTRY

The Club was the only one able to brave all the vicissitudes of last winter. Graphic photographs of runners padding through snow will be recalled. "We never stopped" seems to be a good text for the activities of individual members.

This season, the captain is Alan Lakin, who is naturally keen to maintain the perpetual motion demanded of members. All last year's runners are available and Lakin hopes that some more talent will reveal itself from the freshers.

There are two divisions in the University of London League. The first team, promoted two years ago, finished the season sixth out of 10, although holding a higher place in the season—St. Batholomews were the only hospital to come above them. The second team, although sometimes not well supported, held their position in the top half of their League.

Competition in this division is tough and this year, the team will do well to retain its place. Matches have also been arranged against other Hospitals and Westminster Bank.

Saturday fixtures are not common, but most runners turn out for United Hospitals Hare and Hound, who have a very strong fixture list, including Oxford and Cambridge, Orien, the Banks and Metropolitan Police.

A. Lakin is hoping to supplement training with circuit training in the Physiotherapy Gymnasium during the winter. His ambition is to stay in the first division, and to challenge Barts. for their strong hold on the Inter-Hospitals' Cup. If the spirit and enthusiasm demonstrated last winter is any criterion, his ambitions could be realised.

Reports and Results

RUGBY

GUY'S v. LONDON IRISH

At Sunbury. 6th October, 1963.
Lost 0—23

On a warm, sunny afternoon at Sunbury, London Irish kicked off, and from the start were pressing the Hospital line. Bad passing and handling by the backs, who were taking and receiving the ball standing still, gave rise to some anxious moments which were relieved by Myall's touch kicking. Baker and Brown were well to the fore in the loose forward play and Kingdom's jumping in the line-outs was noticeable.

London Irish opened their account with a fine penalty by Jones, on the ten-yard line, and the Irish followed this up with a fine try by McCarten to make the score 6—0.

The second half was most disappointing as far as the Hospital was concerned and during this period of play the Irish crossed the Guy's line four more times. With only one of these tries converted, and one further penalty, the Irish beat the Hospital by 23 points to nil.

GUY'S v. U.S. PORTSMOUTH

Played at Portsmouth.
Saturday, 5th October, 1963.
Result: won 6—3

Your correspondent unfortunately arrived ten minutes late and missed an opening infringement which gave a penalty goal to our opponents. It was a damp, dark, unwelcoming afternoon producing a greasy ball and wet weather tactics. Guy's were quick to adapt themselves to these conditions and soon gained the advantage on the slow U.S. Portsmouth forwards.

In the tight and loose scrums, Guy's were clearly superior from the start, and the breaking forwards, especially through the line-outs, gave Guy's many yards advantage.

Hesitant passing by the United Services outsides gave repeated success to the scavenging Baker and Brown and from one advantage thus gained Guy's nearly succeeded in scoring in the right-hand corner. Soon afterwards, Morris missed narrowly with a penalty attempt and Guy's were evidently well on top.

From line-out infringements awarded to Guy's, resultant scrums were chosen, and not the customary repeated line-out and thus Guy's supremacy was evident.

At half-time, U.S. were leading by their early penalty goal, but the strong wind now behind Guy's gave the handful of vociferous Guy's supporters heart. And their hopes were not unfounded for Guy's soon were on the attack—Myall and MacGregor placing high punts well to the corners, Kerner and Biggs chasing them on the wings and the whole pack prominent in the middle play. Thus play remained in the U.S. half for nearly the rest of the game.

At last justice was done and Biggs kicked a penalty goal to bring the scores level. Soon afterwards Morris kicked a prodigious penalty high between the posts from the 10-yard line. Thereafter Guy's never released their pressure and won the game most deservedly. The margin could well have been more. Unfortunately the game yielded no tries, but great heart should be taken from this satisfactory result. Guy's were quicker to adapt themselves and to exploit the U.S. mistakes. To the team it will give them great encouragement for their strong games ahead—after all, U.S. Portsmouth did defeat the London Irish only a few weeks ago.

T. J. HUINS

Guy's

A. M. Morris; D. A. Biggs, C. J. Wright, R. Kerner, R. W. T. Myall; H. W. MacGregor, J. E. Davies; E. M. Price, A. Fisher, P. K. Peace, A. J. Kingdom, R. Brown, D. Hartley, I A. Baker (Capt.).

HOSPITAL INFORMATION

APPOINTMENTS VACANT

GUY'S HOSPITAL, S.E.1.

Applications are invited for the appointment of **Registrar** in the **Department of Dental Prosthetics,** to attend on five sessions per week with duties commencing as soon as possible. Forms of application are obtainable from, and should be lodged with, the Superintendent, Guy's Hospital, S.E.1., not later than **Saturday, 2nd November, 1963.**

EVELINA CHILDREN'S HOSPITAL OF GUY'S HOSPITAL, SOUTHWARK BRIDGE ROAD, LONDON, S.E.1.

Applications are invited for the post of **Resident Paediatric House Officer** (with casualty duties) for six months from 1st December, 1963. The appointment is recognised for the D.C.H. and consists of four months medicine and two months surgery. Candidates must be registered practitioners and should apply giving age, nationality, qualifications (with dates), and copies of three recent testimonials, to the Hospital Secretary by first post on **Friday, 1st November, 1963.**

APPOINTMENTS

GUY'S HOSPITAL

JUNIOR STAFF APPOINTMENTS

The following appointments and re-appointments have been made by the Board of Governors for the period beginning October 1st, 1963:—

WHOLE-TIME APPOINTMENTS

MEDICAL

Medical Registrars
Dr. I. A. P. Trafford
Dr. R. K. Knight
Dr. D. A. Lillicrap
Dr. G. M. Davies
Dr. I. R. R. Spurrell
Dr. I..D. B. Rennie

Junior Medical Registrars
Dr. C. Dare
Dr. P. J. Winter
Dr. T. C. Northfield

Surgical Registrars
Mr. J. D. Maynard
Mr. J. C. Gazet
Mr. J. N. Gibson
Mr. I. McColl
Mr. S. A. R. Cooke

Junior Surgical Registrars
Mr. R. J. Heald
Mr. W. G. Hartfall

Registrars in the Throat and Ear Department
Mr. C. Holborrow
Mr. H. B. Holden

Obstetric Registrars
Mr. E. P. W. Tatford
Mr. G. L. S. Rankin
Mr. J. D. Ellis

Registrars in Physical Medicine
Dr. P. J. C. Barry
Dr. M. Dupuis
Dr. J. D. Jessop
Dr. H. J. Wyatt

Registrar in the Cardiac Department
Dr. D. H. Davies

Registrars in Clinical Pathology
Dr. D. N. Whitmore
Dr. P. D Griffiths
Dr. B. Simpson
Dr. K. Allsopp
Dr. D. Horsfield
Dr. N. A. Simmons

Registrar in Haematology
Dr. D. I. K. Evans

Registrar in Endocrinology and Radiosotopes
Dr. S. McHardy-Young

Registrars in Psychological Medicine
Dr. J. H. P. Willis
Dr. K. A. Loucas
Dr. D. J. Brough
Dr. M. Hopwood
Dr. D. H. Myers

Registrars in Child Psychiatry
Dr. R. C. Benians
Dr. B. Davies

Orthopaedic Registrars
Mr. W. A. Crabbe
Mr. F. J. Moynihan
Mr. M. A. Nelson

Orthopaedic and Casualty Registrar
Mr. H. Byrne

Genito-Urinary Registrar
Mr. B. K. Gray

Dermatological Registrars
Dr. A. Bowyer
Dr. M. Chadwick

Registrars in Diagnostic Radiology
Dr. F. L. Cole
Dr. E. J. Roebuck
Dr. A. Klein
Dr. I. R Barnett
Dr. K. A. Howlett
Dr. B. C. King

Registrars in Radiotherapy
Dr. P. F. Wale
Dr. T. Hazra

Registrars in Neurology
Dr. F. G. Campbell
Dr. L. S Illis

Junior Registrar in Ophthalmology
Mr. A. J. Bron

Paediatric Registrars
Dr. N. J. O'Doherty
Dr. P. Zinkin
Dr. J.Martin

Registrars in Thoracic Surgery
Mr. P. J. Molloy
Mr. B. N. Pickering

Registrars in Anaesthetics
Dr. B. R. P. Murray
Dr. D. S. Robertson
Dr. S. R. Williams
Dr. B. Geffin
Dr. J. Hellewell
Dr. J. J. Maher
Dr. R. R. Watkin

PART-TIME APPOINTMENTS

Registrars in the Ophthalmic Department
Mr. H. P. B. Whitty
Mr. P. V. Rycroft
Mr. M. B. R. Mathalone

Registrars in V.D. Department
Dr. I. S. Moss
Dr. J. J. Rohatiner

PART-TIME APPOINTMENTS

DENTAL

Registrars in the Children's Department
Mr. G. A. Kerr
Mr. P. M. Benzies

Orthodontic Assistant
Mr. I. G. Crossman

Registrars in Clinical Dental Surgery
Mr. J. N James
Mr. G. H. Forman

Registrars in Minor Oral Surgery
Mr. L. J. Kessel
Mr. G. F. Thompson

Registrars in Preventive Dentistry
Miss D. R. Butwick
Mr. J. M. McCormack
Mr. J. Metcalf

Registrars in Dental Casualty
Mr. B. A. Foster
Mr. M. A. Gillon
Registrars in Dental Prosthetics
Mr. H. K. Kemp
Mr. A. J. Stewart
Mr. P. B. Morris
Mr. H. C. Davis
Registrars in Conservative Dental Surgery
Mr. J. E. St. Pierre
Mr. A. J. Simons
Mr. I. A. Stuart
Mr. S. G. Adamson
Mr. D. F. Howard
Mr. R. B. Johns
Miss C. S. Shepherd
Mrs. P. Wilson
Mr. C. J. Lambert
Registrars in Dental Radiology
Mrs. B. A. Hinton (née Jennings)
Mr. L. J. Kessel
Dental Officer to treat In-Patients and Salomons Centre
Mr. B. A. Foster

AS WE DID NOT RECEIVE DETAILS OF THE VACANCIES FOR HOUSE-OFFICERS COMMENCING DEC. 1st IN TIME FOR PUBLICATION, WE REGRET THAT WE ARE UNABLE TO INCLUDE THEM IN THIS ISSUE. HOWEVER DETAILS AND APPLICATION FORMS MAY BE OBTAINED ON APPLICATION TO THE SUPERINTENDENT'S OFFICE, GUY'S HOSPITAL.

PASS LIST

ROYAL COLLEGE OF SURGEONS OF ENGLAND
L.D.S.

L. E. Dobson I. Dunn P. R. Eade
Brenda Gilliam P. G. Inward

UNIVERSITY OF LONDON
M.D.
September, 1963.

D. B. Amos I. Rocker

ROYAL COLLEGE OF PHYSICIANS AND SURGEONS OF GLASGOW
M.R.C.P.

J. G. P. Hutchison

NURSING NEWS

Entered
Sister J. Dunning to Patience.
Staff Midwife A. C. Roberts to Victoria.
Staff Nurse F. Lennane to Mary.

Left
Charge Nurse D. Potts from Sarah.

PAPERS BY GUY'S MEN

In order to make this list as complete as possible, Guy's men whose papers have not been printed in this column are asked to send the Editor details of their publications.

Calne, R. Y. and others. Renal transplantation in man. *Brit. med. J.*, 1963, **ii,** 645.

Calne, R. Y. and others. Renal preservation by ice cooling. *Brit. med. J.*, 1963, **ii,** 651.

Gorrill, R. H. & McNeil, E. M. Staphylococcal infection in the mouse. 1. The effect of route of infection. *Brit. J. exp. Path.*, 1963. **44,** 404.

Gower, D. B. Biosynthesis of androst-16-en-3ol-ol from dehydro-epiandrosterone by adrenocortical slices. *J. Endocrin.* 1963, **26,** 173.

Gower, D. B. and another. The mechanism of immune haemolysis. 1. the relationship of the rate of destruction of red cells to their age, following the administration to rabbits of an immune haemolysin. *Brit. J. Haemat.* 1963, **9,** 132.

Humphrey, D. C. Localized accidental vaccinia of the vulva. *Amer. J. Obstet.* 1963, **86,** 460.

Hunt, J. N. The duodenal regulation of gastric emptying. *Gastroenterology* 1963, **45,** 149.

Kilpatrick, F. R. Post-operative recto-prostatic fistula and closure by Kraske's approach. *Brit. J. Urol.* 1963, **34.**

Kilpatrick, F. R. Partial nephrectomy for stone. *S. Afr. med. J.* 1963, **37,** 770.

Meldrum, B. S. Depolarization of skeletal muscle by a toxin from cobra (*Naja naja*) venom. *J. Physiol.* 1963, **168,** 49P.

Rees, R. J. W. and another. Modified Ziehl-Neelsen staining method for indentifying dead *Mycobacterium lepraemurium*. *Internat. J. Leprosy*, 1962, **30,** 414.

Senior, J., Fahim I. Sullivan, F. M. and Robson, J. M. Possible role of 5-hydroxytryptamine in toxaemia of pregnancy. *Lancet* 1963, **ii,** 553.

Turk, J. L. and another. Effect of an unrelated delayed-type hypersensitivity reaction on the antibody response to diphtheria toxoid. *Immunology*, 1963, **6,** 119.

Turk, J. L. and another. Histological study of the early stages of the development of tuberculin reaction after passive transfer of cells labelled with [^{3}H]thymidine. *Immunology*, 1963, **6,** 140

Turk, J. L. and another. Fate of ^{131}I labelled antigens in the skin of normal guinea pigs and those with delayed type hypersensitivity. *Immunology*, 1963, **6,** 148.

Wells, R. S. and others. Bronchial adenoma with the carcinoid syndrome presenting with unusual skin changes. *Postgrad. med. J.*, 1963, **39,** 547.

Wheatley, David. The general practitioner research group. *Clin. Pharm. Ther.*, 1963, **4,** 542.

Wheatley, David. Hypertension—results of treatment. Proc. R. Soc. Med., 1963, **56,** 400.

White, R. H. R. Observations on percutaneous renal biopsy in children. *Arch. Dis. Childh.*, 1963, **38,** 260.

Zorab, P. A. The lungs in ankylosing spondylitis. *Brompton Hosp. Rep.*, 1962, **31,** 255.

PERSONAL

Special rates for Guy's Staff, Students, Nurses and Subscribers to the Gazette. 5 words 10s. 6d. 15 words 21s. 0d. Box Numbers 1s. extra.

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BIRTHS

BATTEN.—To Pamela (née Roberts, S.R.N.) and Brian Batten, M.B., B.S., a son, Guy, on 24th July, brother for James.

BREWER.—To Maureen Elizabeth (née King, S.R.N.) and Dr. Jeremy Brewer, a daughter, Deborah Jane, at Scarsdale Hospital, Chesterfield, on October 7th, 1963.

DAVIES.—To Judy and John Davies, a son, Matthew Graham, on 22nd July, 1963. A brother for Caroline.

EDWARDS.—To Lucy and Derry Edwards, a son, Andrew William, on the 23rd September, 1963, at Bridgend Hospital.

FORSTER.—To Judith (née Holt, S.R.N.) and Alan Forster, M.B., B.S., a daughter, on 1st September, 1963.

HORGAN.—To Margaret (née Esan) and Edward Horgan, M.B., B.S., a daughter, Lucy Mary, on September 10th, in Gloucester. Sister for Simon and Kate.

JAMES.—To Margaret (née Sellicks) and Paul James, a son, Peter Anthony, on August 22nd, at Mbereshi Kawambwa, Northern Rhodesia.

LEADBEATER.—To Ruth and Norman Leadbeater, M.B., B.S., a daughter, Jayne Gay, on September 22nd, 1963, at 'Le Chalet', Mt. Cambrai, St. Lawrence, Jersey, C.I.

LEES.—To Dorothy and Dr. Alan P. Lees, a daughter, Angela Elizabeth, at St. Mary's Hospital, Manchester, on October 1st, 1963. A sister for Paul Duncan.

LIGHTFOOT.—To Madeleine and Martin Lightfoot, B.D.S., a daughter, Caroline, on 11th September, 1963, a sister for Geoffrey.

LISSENDEN.—To Susan (née Wilson) and John Lissenden. M.B., B.S., a second daughter on 11th August, 1963, at Royal Naval Hospital M'tarfa, Malta.

MILTON.—To Patricia (née Le Voi) and Robert Milton, a daughter, Chloe Valerie, on 3rd February. 1963, at Guy's Hospital. Sister to Timothy and Victoria.

PAGET.—To Valerie (née Cooper, S.R.N.) and Seaton Paget, M.B., B.S., D.R.C.O.G., of 16, Quarry Road, Hastings, a son, Timothy David. on 25th September, 1963. Brother for Jane. Sally and Jeremy.

MARRIAGES

CARTER—SHAW.—On 31st August, 1963, at St. John's Church, Ben-Rhydding, Ilkley, Flying Officer Geoffrey Cater to Rita Shaw, S.R.N.

ROBERTS—PRICE.—On July 31st, at Rutland, Vermont, U.S.A., Michael Roberts, M.A., D.Phil., M.B., B.S., to Ursula Price, B.A.

DEATHS

CROUCHER.—On September 4th, 1963, Henry Valentine Croucher, J.P., L.D.S., R.C.S., Eng., of "Timbers", Southborough, Nr. Tunbridge Wells, Kent. Practice address: 153, Anerley Road, S.E.20. Aged 64.

EVANS.—On August 31st, 1963, Sydney Norman Evans, M.D., Lond., of 272, London Road, Burpham, Guildford, Surrey, aged 61 years

GLOVER.—On Tuesday, 17th September, 1963, Dr. J. Alison Glover, C.B.E., M.D., F.R.C.P., D.P.H., aged 87.

LONG.—On 6th August, 1963, Dr. George Samuel Long, M.B., B.S., D.P.H., at his home.

MARKS.—On May 27th, 1963, Maurice Joseph Marks, L.D.S., R.F.P.S., Glasgow, aged 78 years.

TAYLOR.—On Wednesday, 10th April, 1963, W. H. Taylor, L.D.S., R.C.S. Eng.

GUY'S HOSPITAL GAZETTE

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Editors *W. G. Reeves*
T. C. Davis

Sports Correspondent *E. Tiller*

Guy's Hospital, London

PASSIM

Take-In

As a student, the first experience of " take-in " is among the most vivid of one's career, and it soon becomes obvious that it is an exceptionally valuable part of the clinical course. The strange combination of being in close contact with those acutely ill, clerking and investigating patients and receiving concentrated teaching for a week, means that a great deal is learned, some of it perhaps unwittingly. Originally set up to receive those labelled as "incurable", take-in has now evolved into the present system of rotating firms who are on duty for a week. But now after much discussion in committee, it has been decided to adapt the existing arrangements to suit more accurately the administrative structure of the hospital.

The New Scheme is as follows: from November 1st for Surgical firms, and November 12th for Medical firms it is proposed to have a different firm on take-in each day. This is designed to make the task of the nursing staff and residents easier while on take-in and to create a more even distribution of available beds throughout the hospital. The ward-clerks and dressers will continue to be on take-in for the entire week (Tuesday to Tuesday), the firm to which they belong being on take-in for the week-end only, but in rotation as before. During the week the take-in students will be attached to a different firm each day. From November 12th there will be five Medical firms and the daily change will thus take place from Monday to Friday inclusive, leaving Saturday and Sunday for the firm on rota. Surgically, there being only four firms, the week-end with one's own firm will consist of three days instead of two, i.e. Friday to Saturday inclusive.

One aspect of these changes is that it will always be easier to determine the exact bed state of the hospital. To facilitate this, bed-charts for each ward will be sent to the admission office daily, where the information they contain will be transferred to a master-chart describing in detail the bed occupancy at a particular moment of time. It is hoped that these measures will make possible a greater turn-over of patients; perhaps enabling the length of the various waiting lists for routine admissions to be abbreviated.

But although the main purpose of this reorganisation is to promote better continuity between the patients and nursing and medical staff by distributing the pressure of take-in admissions throughout the hospital, we believe that this may be achieved at the cost of considerable disruption of clinical students from their patients. For during the week, at 10 a.m. each day, patients admitted and clerked by the take-in student will be transferred to the firm whose "day" it is, and thus he may only make contact with them for a few hours unless he is able to dove-tail the other firm's rounds with his own. Conversely those clerks and dressers not on take-in will be continually receiving "old" take-ins whom they did not see on admission, did not clerk, but who they will now be required to look after. While organisation

is essential but rarely perfect, one is reminded of that occasion when Christopher Robin went down with Alice.

It is not easy to predict quite how serious this problem will become, but its effect might be more than offset by the long-awaited acknowledgement of an important necessity, *i.e.* the provision of *adequate* facilities for the laboratory investigations which all clinical students are required to do. These can be of particular importance when on take-in, under either system. If this were done it would be appreciated as much as the appearance of an appetising menu in the College.

GUY'S DIARY

NOVEMBER

EXHIBITION. *The Jaw.*

5th	T.	1.00	Dr. MANN. Clinical Lecture. *Hyperthyroidism.*
7th	Th.	1.00	Mr. GLOVER. Clinical Lecture.
8th	F.	1.00	Dr. SCOTT. Clinical Lecture. *The Presentation of Lung Cancer.*
9th	S.	10.00	Departmental Round conducted by Mr. R. S. LAWRIE. Clinical Theatre.
14th	Th.	1.00	Dr. MacARTHUR. Clinical Lecture.
15th	F.	1.00	Dr. N. H. ANTIA, Hon. Plastic Surgeon, Bombay. Clinical Lecture. *Modern Surgical Treatment of Leprosy.*
18th	M.	1.00	Dr. DEUCHAR. Clinical Lecture. *Heart Sound.*
19th	T.	1.00	Dr. EVANS. Clinical Lecture. *Multiple Choice Questions.*

We offer our congratulations to Mr. C. A. Holborow on his appointment as Consultant E.N.T. Surgeon to Westminster Hospital and the Westminster Group of Hospitals as from January 1st, 1964.

We also congratulate Mr. J. C. Stephenson on his appointment to the joint post of Consultant Orthodontist to the Bristol Dental Hospital and to the Royal United Hospital, Bath.

NOTICE

Guy's Science Club

The next meeting of the Science Club will be held on Wednesday, 13th November, at 4.45 p.m. in the Medical School Committee Room (New Pathology Block). Dr. K. W. Taylor, of Radiotherapy Department, will speak on:

"The Machinery of Diagnosis".

The Chair will be taken by Dr. J. D. Dow.

Tea will be served in the Staff Common Room at 4.30 p.m., and a cordial invitation is extended to all members of the Teaching and Research Staffs of the Hospital and Medical and Dental Schools.

MARJORIE J. HILL,
Honorary Secretary, Guy's Science Club.

BERMONDSEY & SOUTHWARK—VI

Their History

PART 1 - A Glimpse into the Early Times

At the time of the Roman occupation the land enclosed by the course of the Thames between Wandsworth and Blackheath was a marshland submerged at high tide, overgrown with weeds and the home of wild fowl. At low water many streams passed through it such as the Falcon and the Effra, and the few islets that stood one or two feet above high water mark are now known as Rotherhithe and Lambeth. A mile or so inland the land began to rise and its sites are marked today by Clapham Rise and Brixton Rise. This was Southwark and Bermondsey at its beginning.

A bridge over the Thames had for many centuries been the focus on to which all activity in South London had been directed. Roman historians mention a bridge across the Thames at this point at the time of the invasion by Plautius in A.D. 43 and remains of Roman oak piles have been found on the mediaeval site of the bridge. It became the apex of the road system that served the channel ports and the coastal provinces and gave connection to the roads which were to lead north. The second London Bridge was built in Saxon times and was alleged to have been broken down by King Olaf's invading shipmen in 1014; however, there are so many conflicting stories about this period that suffice it to say that it was probably damaged many times by fire, flood, frost and destructive Danes. In 1169 Peter, the Bridge master, completely rebuilt the bridge in elmwood, only to begin a new construction a few years later in stone: a construction which took thirty years to complete and which lasted for six centuries. At this time there was quite a spate in bridge-building and Kingston and Staines bridges date from then. This London Bridge, however, was not built for maintaining people, merchants and traffic and several of the twenty-one arches often collapsed with the added weight of houses and shops that had been loaded upon them. One remnant of this old bridge is the stone alcove which was in the old courtyard at Guy's. The present London Bridge was constructed between 1824 and 1831 and is made from granite; one of its builders has written above his tombstone: " Sir Edward Banks, the builder of the three noblest bridges in the world—Southwark, Waterloo and London."

Southwark by 1100 had become a busy centre and meeting ground for merchants and pilgrims and in the early years of the twelfth century the St. Mary Overie Priory and the Palace of the Bishop of Winchester were built. Southwark was still a suburb of the great City however: there were no trades or industries except fishing but because it was within easy reach of Westminster and the Royal Court, many ecclesiastics and noblemen had their town houses here. There were also four prisons to house the growing population of thieves and

robbers, and every parish had its own whipping post and pillory. For a long time the neighbouring land to Southwark had been a waste and a forest; a convenient hideout for any criminal as the access across the water was so easy. Even as late as 1578 the recorder of London wrote that "the South side is dark and shadowed with trees, a bower for conspiracies and a college of male counsell."

There were many travellers on their way to Rome, Seville and Jerusalem who long before Chaucer's time were using the main thoroughfare south and found it convenient to spend the night outside the city walls, they probably stayed at hostelries and the inn did not become popular until the middle of the 14th century. Chaucer himself probably knew Southwark from early childhood as he was born just on the other side of the river in Thames Street.

The famous Tabard Inn stood on the corner of what is now Talbot Yard and was probably built about 1306; it owes its fame to the fact that it was depicted by Geoffrey Chaucer as the departure point for his Canterbury pilgrims.

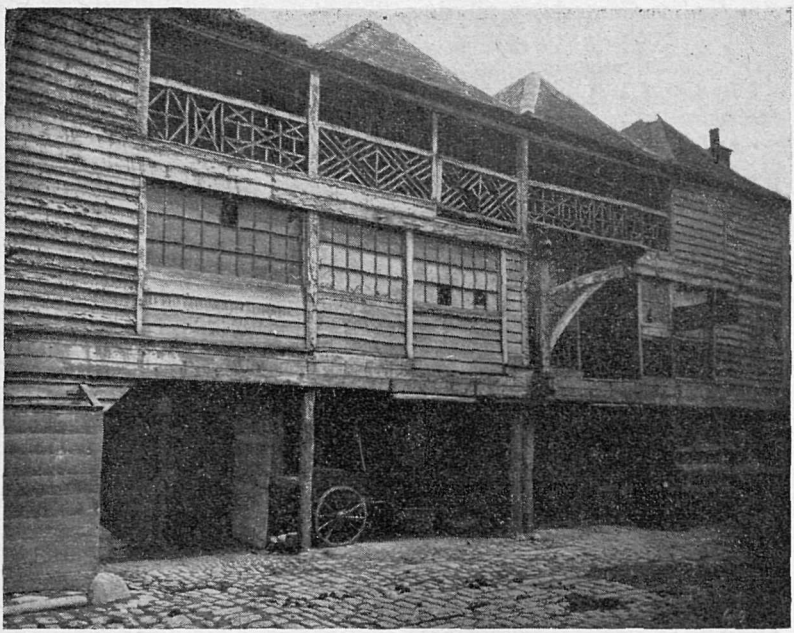
" Byfel that, in that season on a day,
In Southwark at the Tabard as I lay
Redy to wender on my pilgrimage
To Canterbury with ful devout corage."

The Tabard Inn, 1873.

In the 17th century, however, the name was changed to Talbot: no one seems to know why but one historian suggested in 1719 that " an ignorant landlord had put up the Talbot (dog) instead of the ancient sign of the Tabord". Chaucer's inn was probably pulled down in 1629, for in 1635 the Talbot was said to be a "newe building of brick"; after two further rebuildings in the 17th century it seems

very unlikely that any of the mediaeval building had survived. The fire in 1676 expunged the Talbot from the map but it was rebuilt in 1681, demolished again in 1875 and the new building finally destroyed in 1961 because the lease had run out.

In 1534 the Church of England separated itself from Rome and eight years later we find that the inn once known as the Pope's Head has now become the King's Head. In an excavation close to the gateway, about ten feet below the surface, fragments of Roman pottery and coins of Claudius have been found. The King's Head was another inn to be burned down in the Great Fire of Southwark but as the illustration shows, the woodwork in the rebuilt King's Head must once have been well worked and attractive. The sign for it was a well-painted half-length of Henry VIII. There have been three other King's Head inns but the only interesting one seems to have been that kept at the turn of the 18th century by "one-eyed Robert and his very good natured hopping wife".



King's Head Inn Yard, 1881.

Between the 12th and 16th centuries Southwark was the chosen place of residence for ecclesiastical dignitaries. St. Olave's Church, Tooley Street, was built with the design of furnishing the south end of London Bridge with a protecting saint. The religious life of Southwark included several gilds: The Society of Jesus at St. Olave's, the Gild of Brethren and Sisters at St. George's, and many more. The objects of these gilds were for:—(i) the safety of the soul after death; (ii) education; (iii) to feast together in brotherly love, and (iv) to look after their own sick and maintain the old; in that order. On Bank-

side stood the famous " stews " or licensed houses open all day to the profligates of the city and Westminster who came across by boat, and the gardens which were the resort of the sporting class, always large in London. They came here for bull and bear baiting and in 1632 it was said that the gardens were frequented only by "the swaggering roarer, the cunning cheater, the swearing drunkard and the bloody butcher". This part of Southwark also became the site for the new theatres; the Globe, Rose and Hope theatres were all here and their own playwrights, Marlowe, Henslowe and possibly Shakespeare, lived amongst them.

The Southwark Fair was established in 1642 by King Edward IV, so empowering the City to hold a Fair every year on the 7th, 8th and 9th of September. One marked feature of the Fair was some sort of dramatic representation which seems to be a direct progression from when religious plays and processions were performed first in churches and then streets and inns. How especially suited many old Southwark inns were for the plays can be seen in their plans and the drawing of the Tabard showing its spacious yard and balcony. The White Hart inn had, until 1840, a yard and two galleries, one over the other, complete on three sides of a square. A movable stage would probably have been erected on the fourth side of the ample courtyard, the rest of which would have been given over to the "groundlings" which we call the stalls. This inn was also destroyed in the Great Fire but previous to that had been a haven to the rich, rogues and renegades alike. It had never borne an ecclesiastical sign, it was the White Hart of Richard II. Charles Dickens immortalised the White Hart in "Pickwick Papers" and there is a well-known fanciful drawing of Sam Weller cleaning his boots in the inn yard. Having alluded to the Fire of Southwark several times, it is interesting to read how the official broad-sheet of the times described it: "The dreadful Fire in Southwark began on Tuesday, 26th May, at 3 o'clock in the morning, and in twenty hours destroyed near five hundred houses, several people and goods to an inestimable value. It began at an oil shop between the George and Talbot, houses were blown up, the Court House among them, and this prevented the fire from spreading to the streets behind St. Saviour's. St. Thomas's Hospital was saved by a change of wind. St. Mary Overie's took fire twice or thrice, but it was put out. Twenty or more people were killed and many wounded."

A signboard locates the George inn so far as the inn survives as the galleried south wing of the hostelry that was built after the fire. The sign was one of the old ecclesiastical ones, St. George in 1554. "St. George that swinged the Dragon, and sits on horseback at mine hostess' door." On account probably, of the changed feeling with regard to these Saints, the sign later became plain George. For years there had been religious persecution at home and abroad and people had come to connect the Roman Catholic religion with a relentless church and sometimes the most cruel of deaths.

By the latter part of the 18th century there had been many changes; the romantic buildings on London Bridge had been pulled down, Guy's had added another asylum for the sick and there was the

construction of Blackfriars Bridge. The Southwark Fair, chronicled by Hogarth by day and not seedy night was suppressed in 1763, and there were now no more theatres, or bear or bull baiting; at least officially. The working class lived in tenements or courts without pavements, light or water. To the west of London Bridge was a colony of fishermen and there were several pleasure gardens, mostly populated by medical students. Southwark had changed, it was now the home of the working class and not the noble; from a place with no industry it had become the centre of distilleries, breweries, warehouses, flour mills and glue factories. It was not a giant store house but an industrial community.

" Southwark Fair " by William Hogarth, 1735.

Besides the workers, innkeepers, pilgrims, students and Bishops, Southwark has also boasted its actors and writers. Since Saxon times, professional entertainers had been disparaged, particularly by a puritanical church, and with the City in the 16th century turning against them as an "ungodly and dissolute crew," they crossed the river to Southwark where the city could not interfere. The modern art of acting did not begin at the Globe Theatre. There has never been a time when the actor was unknown, the only difference is that he was not formerly allowed to be anything but a buffoon, but now he is an artist and scorns the tricks of the buffoon. It seems that there were actors, if not a theatre, in Southwark as early as 1547, but by the end of the 16th century there were four theatres in Bankside, the Rose, the Hope, the Swan in Paris Gardens near Blackfriars Bridge and the Globe. The various companies of players were known

by the names of their respective patrons. Performances were given at the Rose by Lord Strange's men: women were barred from acting, men or boys taking their parts, and this company was noted for its performances of Christopher Marlowe's plays. Some of Shakespeare's early plays were also staged at the Rose. In 1599 the Lord Chamberlain's men opened the Globe on Bankside. The theatre had been dismantled from its original site in Shoreditch, where there had been trouble with the ground lessor and brought to Bankside for its erection. Among the early productions at the Globe were the two parts of King Henry IV, King Henry V, Romeo and Juliet, Julius Caesar and Ben Johnson's Every Man in his Humour. In 1613 the Globe was burnt down during a production of King Henry VIII. It was soon rebuilt but Shakespeare had returned by then to Stratford and died soon afterwards when he was 52. One of the biggest enemies to the theatre's survival was not the police, nor the puritanic spirit, but the Plague. Not only in 1603 and 1625, but during milder attacks in other years, the theatres and the Bear Garden were closed, and this closure threw hundreds of people out of work.

Behind the palace of the Bishop of Winchester were the Paris Gardens. These gardens were the chief home of the rough and cruel sports; the home of bull, bear and badger baiting, of cock-throwing and dog fighting. Bear baiting was a Royal sport and in 1559 the French Ambassadors having been entertained at the Royal Court, were then taken down river to view the bull and bear baiting in Paris Gardens and were suitably impressed! The sport did have its dangers however, for it was at the Paris Gardens in 1554 that a blind bear ran loose. He caught a serving man by the leg "and bytte a grate peese away, and after by the hokyll bone, that within three days after he died." It is easy to think of Bankside as the pleasure garden of London, but there is a bitter taste in its appeal.

Porter: *You'll leave your noise anon, ye rascals. Do you take the court for the Paris Gardens*?—King Henry VIII, Act v, Sc. iii.

With this brief look into some of Southwark's beginnings, I have omitted much worth mention but hope that a few doors of interest have been opened into the fascinating world and life of Bermondsey and Southwark in earlier times.

T. C. DAVIS.

Part 2 of this account will discuss the relationship between the community and the Borough Hospitals up to the present day and will be published in the next issue.

Isoenzymes

A. N. DAVISON
Biochemistry Department

During the course of some diseases it has been found that the serum activity of various enzymes alters in a characteristic fashion. Estimation of these enzymes has as a result proved to be a useful aid to both diagnosis and treatment. Release of enzymes into the serum may be associated, among other factors, with malignancy or with cellular damage. A good illustration of the latter is provided by the raised serum transaminase activity which persists for some days following myocardial infarction. Heart muscle cytoplasm is especially rich in glutamic-oxaloacetic transaminase (GOT) and damage to the tissue cell results in liberation of this soluble enzyme into the blood stream. Although the estimation of serum glutamic-oxaloacetic transaminase (SGOT) activity after infarction can be of use, particularly if electrocardiographic evidence is inconclusive, the increased serum enzyme activity is, unfortunately, only transient. This disadvantage has naturally led to a search for other soluble tissue-specific enzymes whose activity may remain elevated in the serum for longer periods following a clinical episode. Lactate dehydrogenase (LDH) to some extent fulfils these criteria for the enzyme is present in large amounts in heart tissue cytoplasm and may remain raised in the serum for 8–10 days after heart attack. However, interpretation of raised serum lactate dehydrogenase activity is complicated by the fact that high values can also occur in hepatic, renal and muscular disorders.

The Discovery of Isoenzymes

It has generally been assumed that a specific enzyme is a single protein under the control of one gene. In the light of recent work this simple concept has undergone some modification. It is first necessary to clearly define a single enzyme species. Thus we may identify an enzyme by its substrate specificity. However, it is well known that different hydrolytic enzymes may well act on a single substrate. In the case of true and pseudo cholinesterase, both of which hydrolyse acetylcholine, the enzymes can be clearly differentiated but in other examples such differences are by no means as clearly established. In recent years the properties of many catalytically identical enzymes have been shown to differ from one organ to another even in the same species. Here one may cite the alkaline phosphatases from intestine, liver, bone and kidney for each can be differentiated from the other by their substrate affinity constants, pH optima and their susceptibility to inhibition by bile acids or L. phenylalanine. The name hetero-

enzyme has been used to delineate this class of similar enzymes derived from various organs or species.

Another and altogether unsuspected finding was that of Neilands who, in 1952, reported that even crystalline lactate dehydrogenase was not homogeneous. It was soon found that some individual tissue enzymes—including lactate dehydrogenase—could be separated by electrophoresis into several forms each with different mobilities (Figure 1). Each tissue had its own characteristic pattern of these enzyme components and they are called *isoenzymes* or isozymes, for they closely resemble each other in biological activity although apparently differing both serologically and chemically (see Table 1). This raised an important question—was the synthesis of each multiple enzyme form controlled by single or multiple gene loci? Kaplan and his colleagues have presented evidence to suggest that two fundamental types of lactate dehydrogenase exist in most animals (Table 2–over page). These two types seem to be controlled by two genes and differ in their amino acid composition, in their immunological and physical properties. One type (M) occurs predominantly in skeletal muscle and the H type in heart muscle. Both types exist as tetramers consisting of identical polypeptide chains. It is believed that hybrid forms of the two main types exist to give a total of five isoenzymic forms. Further work demonstrated that the pattern of these isoenzyme forms of lactic dehydrogenase changes in heart and liver during development (Table 3–over page). The various enzyme patterns also differed from one species to another.

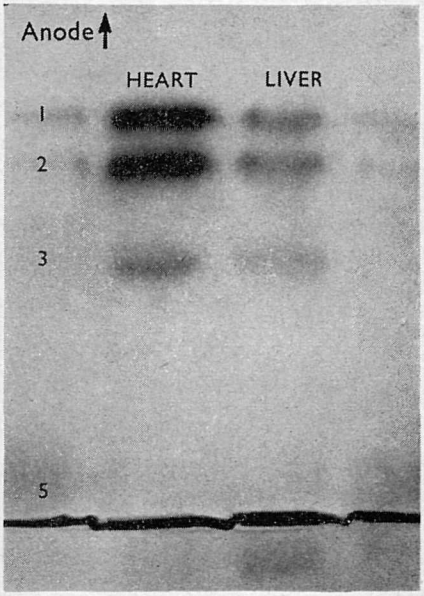


Figure 1. Isoenzyme fractions from dog tissues separated on starch gel. (Courtesy of Dr. D. W. Moss

Tissue	1	2	3	4	5
Skeletal muscle	3	4	7	10	76
Liver	0.2	0.8	1	4	94
Cardiac muscle	60	30	5	3	2

Table 1. Isoenzyme distribution in certain human tissues as percentage of total lactate dehydrogenase (LDH) activity.

The Possible Significance of Multiple Molecular Forms of Enzymes

It is evident from a survey of current literature that considerable biochemical effort has been directed at establishing the reality of isoenzymes and examining their distribution in various tissues. Less is known about the possible roles of multiple enzyme forms. One relevant fact is the shift in isoenzyme patterns seen during development. This suggests a possible change during evolutionary development to accommodate more favourable metabolic systems. Here it is

Table 2. H type lactate dehydrogenase in adult livers of different species

	% H type LDH		
Man	5	Dog	10
Rat	< 5	Pig	78
Rabbit	60	Deer	91
Mouse	< 5	Sheep	90
Chicken	68	Pheasant	25

(After Fine, Kaplan and Kuftinec, 1963)

Table 3. H type lactate dehydrogenase in human and skeletal muscle during development.

	% H type LDH in :	Liver	Muscle
Foetus	6 week	100	100
	3 month	94	85
	7 month	74	60
Adult	No. 1	14	22
	No. 2	4	12
	No. 3	3	26

(After Fine, Kaplan and Kuftinec, 1963)

of interest that undifferentiated human neoplastic tissue tends to lose its characteristic lactate dehydrogenase isoenzyme pattern and contains predominantly LDH-3 type for all kinds of tissues. Another clue to the possible biological function of multiple enzyme forms is provided by the similarity of the isoenzyme distribution pattern for similar species: adult ruminant liver LDH is of Kaplan's H type while rodents and man contain predominantly the M type (Table 3). Powerfully flying birds have mostly H type of LDH while indifferent fliers contain the M type in their breast muscles, an intriguing fact which emphasises the probable metabolic importance of isoenzymes. An example of the way that metabolism may be directed by the isoenzyme pattern is

shown by the action of pyruvate on lactate dehydrogenase. Thus it has been found that the H type of LDH is inhibited by excess pyruvate and hence it is possible that a preponderance of the H isoenzyme may restrict glycolysis in tissues, such as the heart where aerobic metabolism is of importance. Conversely, the M type facilitates glycolysis in tissues, such as muscle, where this kind of metabolism is found. Another possibility is that each multiple form of an enzyme is concerned with a catalytic reaction in a restricted part of the cell. An illustration of this is provided by the malic dehydrogenase from mitochondria and cytoplasm which exist in two distinct forms—suggesting a possible relationship between cellular location and biological function of the isoenzyme.

It is clear then that we have much to learn about the significance of multiple forms of enzymes. It may be suspected that these new observations are but a small facet of the exciting and ever-developing advances being made in the field of molecular biology for the heterogenity of enzymes is consistent with that of other types of protein (e.g., haemoglobin) now so clearly established.

The Practical Application of Multiple Enzyme Forms

Following the discovery of multiple enzyme forms it was first necessary to demonstrate that these isoenzymes were not artifacts. There now seems to be a considerable body of evidence by reputable workers to suggest that this is not so (see above). But before passing on to the practical application of this latest branch of enzymology, there is still one other question that the clinical pathologist will raise—can one separate and assay serum isoenzymes with the equipment generally available in a modern laboratory?

In the method commonly used for the estimation of isoenzymes small volumes of serum or tissue extract are placed in a slit on a rectangular strip of starch gel prepared with buffers of fixed pH and ionic strength (e.g., barbitone buffer pH 8.6, ionic strength 0.05). Current of appropriate voltage is applied (e.g., 120 volts for 18 hours). After separation the enzyme distribution may be revealed by addition of substrate plus nicotinamide adenine dinucleotide (NAD) followed by coupling to a suitable tetrazolium salt. Enzyme activity is indicated by the formation of red or purple formazan dye, and the intensity of colour can be measured by a densitometer. Alternatively, the starch gel strip, after electrophoresis, can be cut up into 0.30 cm. gel lengths. Each strip can be eluted to recover separated enzyme and its activity can be determined by a convenient method. Such techniques are undoubtedly within the capabilities of most laboratories but the investigation is time-consuming and would certainly require the attention of a skilled worker. It was, therefore, of great practical importance when it was shown that one only of the lactate dehydrogenase isoenzymes acted on α-hydroxybutyrate. Activity of one of the LDH isoenzymes may therefore be estimated by a simple spectrophotometric determination (similar to that for the transaminases) without recourse to a preliminary electrophoretic separation.

Isoenzymes and Clinical Medicine

A great deal of work has now been published on the activity of serum isoenzymes in a variety of diseases. The object of this research has been to identify a characteristic isoenzyme pattern or "fingerprint" in the serum and relate this to possible damage or disease in a particular organ. The following few examples serve to illustrate current work of this type.

Myocardial Lesions

Serum lactate dehydrogenase (SLD) activity may remain elevated for at least a week after myocardial infarction and estimation of this enzyme is therefore of more potential value than that of the serum transaminases. Since the increased lactate dehydrogenase activity can be derived from other tissues it is necessary to separate the five multiple forms of the enzyme by electrophoresis before positively identifying the damaged tissue. Wilkinson and his colleagues have found that serum α-hydroxybutyrate dehydrogenase (SHBD) activity is associated predominantly with the fast-moving lactate dehydrogenases (SLDH) characteristic of heart muscle. The ratio of SLD/SHBD can then be utilised to specify the tissue damaged. Technically, the estimate of both dehydrogenases is much less laborious than would be necessary for determination of the total isoenzyme spectrum. In practice, estimation of SHBD has proved more reliable than transaminase determinations and the incidence of false positive results is rare (Elliott, Jepson and Wilkinson, 1962). Of particular interest is the finding that the SLD/SHBD ratio is of proved value in the differential diagnosis of chest pain.

Liver Diseases

The detection of the characteristic liver isoenzyme pattern in disease of the liver is rather more difficult for the predominant liver LDH–5 is unstable when liberated into the blood. Nevertheless, the typical spectrum has been seen in cases of infectious hepatitis. In this disease also the SHBD/SLD activity ratio has been found to be below normal. It would, however, seem that assay of serum glutamate-pyruvate transaminase activity is probably of more practical value in liver disease.

Megaloblastic Anaemia

Very high levels of serum hydroxybutyrate and lactate dehydrogenases are found in some megaloblastic anaemias. Treatment with vitamin B_{12}, in appropriate cases, results in a slow return of the serum enzyme to their normal activities.

Kidney Diseases

Alkaline phosphatase has characteristic properties (e.g., substrate affinity) but unlike the lactic dehydrogenases the properties of phosphatase isoenzymes in most individual tissues do not differ. Recent histochemical evidence, however, suggests that at least two types of alkaline phosphatase are present in human kidney. In diabetes

mellitus or benign essential hypertension renal biopsy specimens show a lack or sometimes a complete absence of alkaline phosphatase as judged by one method (Gomori's calcium precipitation method) whereas using an azo-dye technique activity was virtually normal. This work is an example of the way in which histochemical observations can be correlated with biochemical studies and as a result provide the clinician with useful information.

Conclusion

Although it is perhaps rather premature to judge the usefulness of isoenzyme determination as an aid to diagnosis, present research suggests—contrary to early expectations—that this type of investigation is of limited application. The real value of the concept of multiple enzyme forms is that it provides another new parameter for investigators in the field of biological research.

REFERENCES

ELLIOT, B. A., JEPSON, E. M. & WILKINSON, J. H. (1962). *Clin. Sc.* **23**, 305.

ELLIOT, B. A. & WILKINSON, J. H. (1963). *Clin. Sc.* **24**, 343.

FINE, I. H., KAPLAN, N. O. & KUFTINEC, D. (1963). *Biochemistry* **2**, 116.

KING, J. & WAIND, A. P. B. (1960). *Lancet* **ii**, 1361.

MOSS, D. W. (1963). *Lecture in "Scientific Basis of Medicine"* series.

MOSS, D. W. & KING, E. (1962). *Biochem. J.* **82**, 19 P.

STEWART, T. W. & WARBURTON, F. G. (1961). *British Heart Journal*, **23**, 236.

WIELAND, T. & PFLEIDERER, G. (1962). *Angew. Chem. internat. Edit.* **1**. 169.

NOTICES

Quodlibet Society

The third in the series of four talks on "Africa Today" will be held in the Students' Club on November 7th at 8.0 p.m. The speaker will be Mr. Michael McWilliam, a member of Montague's Bank, and he will talk on: *Pan-Africanism—its Economic and Political Implications.*

All members of the hospital are warmly welcomed to come and express their views at these meetings.

Guy's and UNICEF

A party will be held in aid of U.N.I.C.E.F. (United Nations Children's Fund) on Tuesday, November 12th, from 8—11 p.m., in the Upper Lounge of the Students' Club. A buffet supper and drinks will be provided. There will be dancing to records.

Tickets will be 5s. single or 8s. double, and can be obtained at the door.

Students, nurses, and the Staff of the Medical and Dental Schools are invited. The profits will be given to U.N.I.C.E.F.

GRAHAM STIMPSON (*Church of England Society*).
PETER SIMS (*Catholic Society*).

A Medical Take-In

By T. E. J. HEALY

"Dear Doctor,

While walking in the forest last Wednesday, Mr. J. was bitten by a snake . . . "

This doctor's letter introduced an interesting personality and an unusual problem to Bright Ward.

The Complaint

Swelling and pain in the right leg, following a snake bite three days previously.

The History

At 2.15 p.m. on Wednesday, 7th of August, Mr. J. was bitten twice by an adder on the lateral aspect of his right foot. His companion sucked and squeezed the wound. Swelling of the foot was rapid. When, after five minutes, Mr. J tried to replace his sandals, the strap required slackening two notches beyond its usual position. The patient recorded that he now walked briskly for 15 minutes to get to the local hospital. Walking produced shooting pains inside the thigh and lateral surface of the calf.

At 4.15 p.m. he was admitted to his local hospital and treated with an antihistamine and oral penicillin. His foot was now swollen and tender and although up to this time he had felt quite well, he now began to feel unwell and experienced shivering attacks and vomited several times.

By Thursday morning he felt quite well again but the oedema over his foot had spread up into his leg. By Friday morning the oedema had reached mid-thigh. However, he felt well and was discharged to attend to his private affairs. Unfortunately, by Saturday morning the oedema had spread over the inguinal ligament and his leg was aching though not severely. He described the pain as "a gentle ache". He now consulted his own doctor, who arranged for him to be admitted to Guy's.

On Examination

I was confronted by a cheerful, bearded and apparently healthy man who, though not pyrexial, felt warm and was perspiring.

The Abnormal Findings

The right femoral and other arterial pulses in the right leg could not be elicited. Pitting oedema extended from the foot to the inguinal ligament. The right thigh being 27½ inches maximum circumference contrasted with the left thigh, the circumference of which was 21½ inches at the same level. The skin was under considerable tension because of the oedema. Bruising was evident over the Dorsum of the foot. Though definite tenderness was found in the calf, no veins could be felt. Sensation over the limb was normal but power and movement were reduced by pain and also by the mechanical embarrassment of the oedema.

Diagnosis

Deep vein thrombosis, following a snake bite.

Treatment

Heparin 10,000 units, 6 hourly. Hydrocortisone 100 mg followed by prednisolone 10 mg per day. Phenergan 40 mg per day. Phenindione was started 24 hours later.

Within 24 hours, tension in the leg was reduced and after 48 hours the leg circumference had fallen to 26¼ inches. While the patient remained in Guy's, his fluid balance was within normal limits. He did report, however, that he had suffered some oliguria in the previous hospital. Three days after admission to Guy's he was treated with saluric to reduce the fluids "blocked" in his leg. His weight dropped 11 lbs., and the leg oedema subsided. During his Guy's sojourn his temperature, pulse and respiration did not vary beyond the normal range. The prednisolone and phenindione were gradually reduced and finally discontinued and he was discharged on 23rd, i.e. sixteen days after admission. At the time of discharge there were no physical signs remaining from his misadventure.

Discussion

The Emergency Treatment of the English Adder Bite

A light tourniquet to prevent lymphatic drainage of the venom and immobility by splints or bandages. Immediate transport to hospital where treatment should depend on the age of the patient and on his condition.

Young children are to be admitted and 1—2 ml of anti-venin should be injected into the wound area and 8 ml given intramuscularly.

In the case of patients who are more than 10 years old and who have suffered no reaction within two hours of the bite, all that is required are rest and antihistamines. However, if there is marked collapse with vomiting, 20 ml of anti-venin may be given intramuscularly in addition to antihistamines. The dangers of serum sickness may outweigh the advantages to be gained by the use of anti-venin and if therefore the effects of venom are localised, the treatment should consist of antihistamines, hydrocortisone, penicillin and anti-tetanic serum or toxoid.

N.B.—The only death reported from an adder bite in England and Wales during the 18 years prior to 1960 was due to anaphylaxis after the anti-venin was given (Morton).

Cutting and sucking the wound are contra-indicated in modern treatment.

It has been suggested that intravenous plasma may be used to reverse vascular collapse while awaiting the arrival of anti-venin but this treatment is usually obviated by the use of antihistamines and hydrocotisone, except in extreme emergencies.

Acknowledgments

I should like to thank Dr. C. G. Baker for his encouragement and permission to write this article and also Dr. C. Dare for his helpful criticism.

References

GODDARD, 1951, B.M.J., 1, 1394; ARIFF, 1955, B.M.J., 2, 205; MORTON, 1960, B.M.J., 2, 373.

CORRESPONDENCE

Hospital Practice?—A Reply

SIR, With reference to the letter of Mr. Kitchener published in the last edition of your journal, news of which has subsequently reached the national press, I feel that it is only fair to point out that I saw none of the reluctance, described by Mr. Kitchener, of the nursing staff to provide tooth-cleaning facilities for bed-ridden patients. Nor, in the light of experience, from four previous admissions to New Guy's House, was the standard of nursing, in any way, lower in the ward in question than the general high standards prevalent in the Hospital, despite the fact that re-decoration of the ward was in progress at that time with disturbance of ward function, and I was in the bed opposite to that of Mr. Kitchener.

Ventilation of the top floors of the tall new building does present a problem which cannot be solved merely by opening a window, as wind-force is experienced in full at this height, resulting in draughts more injurious to the health of the patient than the fresh air so provided. This is, however, not a problem for patients, but for architects!

As for mixing infected cases with clean dental cases, Mr. Kitchener must have forgotten the natural bacterial flora found in every person's mouth, whether they clean their teeth or not, and I should have thought he had no need to worry on this score. In fact, despite the presence of septic cases in the ward referred to, good nursing technique allows patients with healing operation wounds to be nursed in safety.

Mr. Kitchener would not appear to have been very observant, or these conclusions would have been obvious to him, and his letter unnecessary.

Yours, etc.,

J. GODDARD.

St. Christopher's House,
Long Lane, S.E.1.

SIR, I don't think Mr. Paul Kitchener is likely to get the nursing staff at Guy's to teach Preventive Dentistry, or to be very sympathetic to their patients' dental needs until they are themselves taught the elements of the subject.

There is now a Chair in Preventive Dentistry at Guy's, and it would be a splendid thing if the Department's influence could so pervade our great hospital that it might become an example to all others in the country.

A symbolic start has been made at our Dental Society Dinners where the tables are decorated with bowls of apples for end of meal prophylaxis. . . .

. Could not a small space be found in the syllabus of Guy's nurses for basic instruction in Preventive Dentistry No patient should be "greeted with surprise and impatience" when he asks for the necessary equipment to clean his teeth.

Yours, etc.,

GORDON M. WILLIAMS.

28, Thames Street,
Kingston-upon-Thames.

Clinical Thermometry

SIR, I was surprised at the opening sentence of Dr. Joseph's clinical lecture, published in the *Gazette* on 5th October, saying that it was difficult to trace the early history of the use of the thermometer and suggesting that it was not until the early nineteenth century that references to its use could be found.

A very full bibliography is to be found in the Sydenham Society's English edition of Wunderlich's "Medical Thermometry" published in 1871; the first German edition was 1868.

From this it appears that the human temperature was investigated by Sanctorius (1561—1636), who worked both at Padua and at Venice.

Guy's men will be interested in a little known article written by Sir James Goodhart in 1869 when he was a house physician. Entitled, "Thermometric Observations in Clinical Medicine", this appeared in the Guy's Hospital Reports

(3rd series, vol. xv, p. 365). Goodhart, although always a "general physician", was one of the early paediatricians, being the first to diagnose congenital pyloric stenosis at Guy's in 1891. The specimen is (I hope) still in the Gordon Museum.

Yours, etc.,

MAURICE SHAW.

Morton House,
Chiswick Mall, W.4.

The Student Nurses' Association

SIR,—Following an article about the British Medical Students' Association, the Committee of Guy's Unit of the Student Nurses' Association would like to give similar publicity to their organization.

The Association aims, among other things, to link the student body at local, national and international level. Two of our members, E. A. Beaton and J. Haigh, have just returned from a visit to America, where they studied student nurse training in comparison with that in Britain. The Association also links the student and the trained nurse by its liaison with the Royal College of Nursing cultural activities—recreation and hobbies are all supported—members have the use of college libraries in London, Edinburgh and Belfast without charge, and also Headquarters common rooms and buffets.

Guy's joined the Association in the Autumn of 1952, and re-opened in 1956. Interest, unfortunately, has waned despite outward appearances. At Guy's we are in the embarrassing position of having one of the smallest units in the country in ratio to the size of the hospital. On paper the Unit appears to have about a twenty per cent membership—i.e., one hundred and twenty nurses; in practice this is not in evidence. The largest attendance in the last six months has been ten—and this from a hospital boasting six hundred nurses in training. The Student Nurses' Association is the representative body of all student nurses, and as such should have a greater membership number—if only from the point of view of a larger backing for wage claims and discussion of training schedules.

Members may:—

(1) Take part in study tours, vacation exchanges and have the opportunity of attending the International Congress of Nurses.

(2) Have help and advice on professional matters during training.

(3) Join the Royal College of Nursing with reduced rates on registration.

(4) Claim automatic membership of the National Union of Students, and participate in such activities as travel, farm camps, youth hostelling, and drama festivals.

The "Nursing Times" is the official journal of the Royal College of Nursing, and can be obtained at reduced rates by members.

The subscription rate of the Association is thirty shillings, which covers the complete training period. This, in face of the advantages available, is not extortionate.

Officers of the Student Nurses' Association at Guy's are:—

E. A. Cowdrey, *Chairman.*
J. R. Baker, *Secretary.*
W. Hillier, *Treasurer.*

Any of these people will be glad to answer any queries arising from this letter and give assistance to any nurse requiring details of membership, concessions or further advantages.

Yours, etc.,

J. RUSSELL BAKER.
Hon. Secretary, Guy's Unit, Student Nurses' Association.

Nurses's Home,
Guy's Hospital.

Rugby Club Ball

SIR, May I notify your readers that the Rugby Ball will be held at Quaglino's on Wednesday, 18th March, 1964. Further details will be published nearer this date.

Yours, etc.,

ROBERT W. T. MYALL,
Ball Secretary.

REVIEWS

THE PREVENTION OF CERVICAL CANCER.

by Hugh C. McLaren. The English Universities Press, 1963. Pp. 134. *Price* 21s.

This small book is written by the Professor of Obstetrics and Gynaecology in the University of Birmingham. It is written for students and general practitioners in particular, and in a brief introduction he urges not only immediate examination for abnormal bleeding, but routine yearly gynaecological examinations of all women with the object of preventing cancer of the cervix. The meat of the book lies in the chapters on the detection of carcinoma-in-situ by Papanicolau smear tests and the treatment of the condition when found. Professor McLaren writes vividly and is an enthusiast, and the book reads well. There is no doubt that cytology has come to stay, and that it can make a great contribution by detecting carcinoma-in-situ. We still do not know how often this progresses to invasive carcinoma, or if this is always preceded by carcinoma-in-situ, but it would certainly be a good thing if all women, over 30 years anyhow, were regularly screened if this can be done without causing needless anxiety, and without leading to needless hysterectomies or even conisation for conditions unrelated to carcinoma-in-situ. Owing to a shortage of trained cytologists, such a service to the communmity can only develop slowly, as Prof. McLaren points out.

J. B. BLAIKLEY.

BASIC NUTRITION.

by E. W. McHenry. Revised Edition. Pitman Medical. 1963. Pp. xviii + 409. *Price* 45*s*.

This is the revised edition of a well-known Canadian book. It discusses nutrition from hunger and appetite, through energy and nutrient requirements, to evalution of nutritional conditions.

It is written so that it makes only elementary demands on physiological and biochemical knowledge and could equally well be read and understood by medical student, nurse or dietitian. With the selected references given, it could be a starting point, and for those who wish for a more detailed knowledge of nutrition, food tables (in household units) are included in the appendix, adding to the surprising wealth of information contained in such a small book. The text is clear and easy to follow, but as it is basic, no dietary regimes are given for any specific disease. For those who want to understand the simple fundamentals of nutrition and at the same time be provided with a source of easy reference, this book can be recommended.

I. MACDONALD.

ANIMAL TISSUE TECHNIQUES.

by Gretchen L. Humason. W. H. Freeman. 1962. Pp. 468. *Price* 57*s*.

This book would be a useful working text for any histological laboratory. In particular, the junior technician will find it especially useful since the first third of the book is devoted to basic procedures. Throughout, the author's comments on the large number of methods which she describes will help the uninitiated as well as the experienced technician to overcome many of the stumbling blocks which are encountered in the day-to-day work of the laboratory.

The methods which are described are mostly the standard, well established ones of conventional routine histology, only a brief section being devoted to the newer fields of autoradiography, histochemistry and electron microscopy. Vital staining, tissue culture, tracer techniques and microinceration are some of the fields which are not included.

One of the most useful and unusual aspects of this book is the large number of references to original work which the author has given.

G. A. THOMAS.

WE MET AT BARTS

by Geoffrey Bourne. Frederick Muller. Pp. 288. *Price* 25s.

This is the autobiography of a physician, renowned for his interest in cardiology, written soon after his retirement from Barts.

It is colourfully written, full of anecdotes and sketches of personalities well known to generations of Barts' men and it traces the author's progress from student to consultant physician. Bridging the gap between the days before and after the introduction of the National Health Service it will appeal to the generation of medical men who have served in both and particularly those trained in the same school as the author.

It makes excellent reading and can be recommended to those familiar only as names with many of the distinguished physicians mentioned in its pages. The one described as a gourmet looks more of a gourmand from his photograph, but this may be only surmise. The tribute to Dr. J. H. Drysdale, on the other hand, is a fascinating character study of a man to whom the author owed much and whom he clearly admired. The imprint of his character, indeed, may perhaps be visible in the delightful clarity of the narrative, which the author maintains throughout.

G. BLACKBURN.

THE BASIS OF CLINICAL NEUROLOGY

by S. Brock and H. Kreiger. Bailliere, Tindall and Cox. 1963. Pp. 616. *Price* £5 12s. 0d.

The sub-title, "The Anatomy and Physiology of the Nervous System in their relation to Clinical Neurology" aptly describes this book now in its fourth edition, for which Professor Brock has been joined by Dr. Krieger as co-author. The general layout remains the same, though considerably expanded.

It is well printed on good paper with clear type. The text is very readable and is adequately illustrated with line diagrams and photographs; most of these are excellent and well labelled, particularly the reproductions of cerebral angiograms. Unfortunately, there are several diagrams which illustrate only poor draughtsmanship; this not only spoils the general impression of the book but fails to clarify the text. There is a good bibliography at the end and an adequate index.

The nervous system is considered in logical steps starting at the periphery with chapters on the nerve impulse, reflex arc and the role of the spinal cord in the system as a whole. It is very surprising to find no mention of the neuromuscular junction, in view of the many neurological conditions centred on it. The anatomy of the brain-stem is followed by an account of its control of vital function and reflex activity and including a very good account of its role in eye movements. Then comes a brief and disappointing chapter on the cerebellum; but the following chapters on the thalamus, basal ganglia and extra-pyramidal system are good accounts of difficult subjects. Next the various lobes of the cerebrum are considered in relation to their function; that on the parietal lobe being virtually a synopsis of MacDonald Critchley's monograph. Finally there are chapters on electroencephalography, electromyography and pneumoencephalography which are good, concise introductions to these studies, and can be recommended to all medical students.

Within the short confines of its size and aims this book achieves all it sets out to do as a basis for the clinician; however, it is difficult to see its place among a medical student's textbooks since its price alone is prohibitive. Although for the student and general physician it would provide an excellent reference book, it is too brief in this context to be of value to the more advanced students of neurology. It can, however, be strongly recommended to potential membership candidates and those of similar status, who would indubitably profit from the time spent by a greater understanding of the fundamentals of clinical neurology.

M. D. O'BRIEN.

SPORT

RUGBY FOOTBALL

To meet Cambridge University, Oxford University and Bedford in a week, would test the best in the country. It was not surprising that points were conceded, but it was heartening that, by the time Bedford arrived, much had obviously been learned. This was a stimulating match, which must have left a good impression on spectators and players alike.

Alas, the visit to Cheltenham showed a regression in the activities of the pack. With one member of the side encountering stalling action by British Railways, the final place in the side was open to three invalids—one a hockey player with broken ribs. A. Morris stepped in, and kicked a penalty that was not enough, and the side lost 3—9.

Guy's v. Bedford at H.O.P.

ASSOCIATION FOOTBALL

The long awaited 1st Round University Cup match against London Hospital —last year's Hospital Cup winners—resulted in a satisfactory and encouraging win. With the London 'keeper injured early in the game, Guy's dominated the first half, and with goals by Atkins, Elias and Cutler, relaxed in the second to run out 3—1 winners. The outstanding performance in a good team display was by J. Cochrane, and the side look forward now to a strong match against University College.

In the outstanding win against Reading University, Parry returned, and his skill reminded us that he also has been a United Hospitals player. This effort, against such strong opposition, bodes well for the future.

WOMEN'S HOCKEY and LACROSSE

The ladies' sporting activities are seemingly frustrated at every turn. Raising a team is one thing, but finding a pitch is almost impossible—and a home pitch? Enthusiasm is always rampant to start with, but often the difficulties must seem insuperable. This year, Hockey and Lacrosse are in the hands of enthusiasts determined to promote their club's activities throughout the season.

Hockey captain Hilary Barnes has no illusions. With several promising new players, she hopes to play more than the four games played last year—and to make a little progress in the Cup where previously Royal Free have always proved a first round impediment. She hopes to form a compact side playing as a team rather than as individuals, and, most important, to complete a season of hockey and win a game or two. And she wants to try to have a training session. With no tour, no festival, and every game away from H.O.P., this is certainly a test of enthusiasm and spirit.

Lacrosse captain Janet Hock is optimistic. Eighteen fixtures have been arranged where one was played last year. She has strong support from Wendy Higlett—both London University players—and although the side will badly miss Pat Hall-Matthews, they have 1½ teams of players. She has been promised occasional use of the Soccer Pitch at H.O.P., but home matches will be played on Clapham Common. She hopes that training will be better attended and that matches will be played and won.

Cinderella sports both, but the captains seem well aware of the problems. Any more players would certainly be welcomed in an effort to ensure full seasons of play.

Reports and Results

RUGBY

GUY'S v. CAMBRIDGE UNIVERSITY

At Cambridge 12th October, 1963.
Result: lost 29—0

The match was played in brilliant sun on a perfect pitch. The conditions were ideal for bright open play, but unfortunately only Cambridge took advantage of them. The play followed the pattern of recent years: it started quietly with scrambling play amongst the forwards, with no particular advantage to either side, and the Guy's supporters were encouraged, hoping that this would be the occasion when their side would hold their own. But the quality of the Cambridge side was quickly revealed when, following a mis-kick by one of the Guy's halves, the ball was carried over the Guy's line. In the scrum-five that followed the ball was smartly hooked by Cambridge, and a pass by Frankom to the Cambridge left wing Hewitt produced a score in the corner. Guy's returned to the attack, and a high kick by Myall looked promising, but it was well fielded by the Cambridge full-back Pritchard. Some more forward play followed with good work for Guy's by Peace in the line out and Brown in the loose. Cambridge then gained possession of the ball from a line out and a good cross-kick by Martin, the Cambridge right wing, was well marked by the Guy's full back, Morris. The Cambridge backs were now getting into their stride, and a good break followed by Frankom who turned in-field but his pass went astray. Yet another break by Cambridge was followed by a try by Pritchard, converted by Harvey. Guy's were then awarded a penalty and a difficult kick by Morris failed. Just before half-time Cambridge scored again after a good movement by the Cambridge backs.

Half-time: Cambridge 11, Guy's 0.

The second half opened with an onslaught by the Cambridge backs, but Guy's defended well, and Morris, the full back, made some good saves. Eventually, following a good run in which all the Cambridge backs handled the ball, the Cambridge right wing, Martin, scored in a corner. Guy's were getting their fair share of the ball in the set scrums, but ineffective short kicks ahead by the backs were unproductive and often transferred the ball to Cambridge. Cambridge now romped home with scores by Greenwood, James and Frankom.

The result was disappointing for Guy's, but similar to those of recent years. The situation at half-time was not too disastrous, and most of the scoring was in the second half, as has so often happened in matches against stronger sides. On the same day, however, some higher scores were recorded in club matches in London and elsewhere, and the first XV need not be unduly depressed. If the side is to have a successful season it seems essential that the backs should develop more attack and penetration. In this match our wings, Biggs and Kerner, both strong runners, hardly saw the ball. Tackling should be more aggressive and resolute. Too often we seem to run with the man with the ball expecting him to pass. This allowed the strong-running Cambridge backs to get into their stride, making it yet more difficult to stop them.

J. S. BATCHELOR.

GUY'S HOSPITAL v. OXFORD U.R.F.C.

At Iffley Road 16th October, 1963.
Result: lost 17—0

This fixture took place after many years lapse, at the University's request, to aid their selection of a team to meet the All Blacks on 22nd. Guy's certainly put them to test, with a hard working pack of forwards. Destructive tackling by the threequarters well contained Oxford.

The first half developed into a series of forward battles, in which the two packs shared the honours. Price had more than his share of the ball from the tight scrums. Price and Kingdom both served their threequarters well

from the line-outs. Morris, though unlucky with a penalty early on, was a tower of strength at full back; he well deserved the applause for his long kicks to touch, thus easing a lot of the pressure on the forwards. Myall also covered and defended well.

At half time there was no score, the pattern of play continued, with the back now covering tirelessly and sharp tackling by the centres and wings.

Gradually the superior weight of the Oxford pack began to slow the Guy's heel from the fight, and this insidiously disrupted the Guy's harmony. After 20 minutes play in the second half, a penalty, awarded for an offside infringement gave Oxford an initial three points lead.

Lewin, at scrum half for Oxford, finding himself having more and more room in which to move started a series of penetrating attacks linking well with his backs and forwards.

Two tries came from Lewin's efforts; the first where he put Morgan, on the left wing, over by the corner flag, and the second where King, backing up well, scored beneath the posts.

The third try came from a fine passing movement with Whyte, Jones and Silk, from which Thomas scored. King gained his second try of the match after a break by Thomas. As all previous conversion attempts had failed, D. K. Jones added two points to the last try.

The Hospital side is to be congratulated on its fine performance in an enjoyable game to watch. The attack, though limited to breaks by Wright and penetrating kicks by Edgar, failed to produce a score, despite strong running by Kerner. The pack played above itself and deserved full credit.

DAVID GOURLEY.

Guy's—A. M. Morris; D. Fleming-Jones, C. J. Wright, J. A. Edgar, R. Kerner; R. W. T. Myall, M. Murray; J. E. Davies, E. S. Price, A. Fisher, A. J. Kingdom, R. Brown, J. Hartley, I A. Baker (Capt.).

GUY'S v. BEDFORD

At H.O.P. Saturday, 19th October.
Result. lost 23—11

With memories of the heavy defeat by Cambridge and the hard game against Oxford during the preceding week fresh in their minds, Guy's supporters awaited the game against Bedford with some trepidation, particularly since our opponents included in their record an overwhelming victory over the London Hospital on the previous Saturday. However, these dark thoughts appeared to have no effect on the team whatsoever, and from the moment the whistle blew we were provided with the kind of game which is a joy to watch and in which it is exhilarating to play. Open, and at times almost carefree, rugby was tempered by close and controlled forward play when the situation demanded it. Perhaps lessons learnt at Cambridge and Oxford contributed to a mature performance.

The match opened with Guy's playing down wind and it was soon evident that both sides were going to score points. The ball moved rapidly from wing to wing and with occasional well directed kicks to touch, the following wind helped Guy's establish and maintain an offensive position in their opponents half. Bedford's fine tackling prevented us gaining the essential early lead although on one occasion only a foot in touch discounted a try. The line-out play at this stage was outstanding with Peace and Kingdom being strongly supported by the props. The latter, with Price hooking, had a commendable game against an experienced and strong Bedford front row. It was when our opponents found their feet and went into the attack, that it became evident that Guy's had learnt the value of hard, quick tackling against which no side can score many tries. At half time Bedford were 11—6 in the lead, one of their tries being scored following a high corner kick which bounced kindly for the wing. Myall kicked a good penalty and followed this with a remarkable drop goal from well out near the touch-line Perhaps the inspiration of Don Clarke is with us already?

The pattern of play changed in the second half with Bedford settling in near our corner flag for a long period, relieved intermittantly by superbly controlled forward rushes which drove them back to the half-way line on a number of occasions. Baker had his forwards working together as one man, and besides gaining ground, this had the effect of making the Bedford halves look, and no doubt feel, horrified and uncomfortable. However, aided by the opportunities of that untiring forward, Rodgers, our opponents began to score points. One bad lapse occurred when our forwards had their heads buried in a loose scrum and the backs, their thoughts elsewhere, allowed Bedford to run in for an easy blindside try. Honour was regained later when Guy's replied with the best score of the match, Biggs grounding the ball near the posts after a combined movement beginning near the halfway line.

The game ended with Bedford victors by 23—11, a most enjoyable afternoon for players and spectators alike. Variety in attack may have given us a win, for although Myall coming up into the line gave an overlap on a number of occasions, we didn't see the inside pass to the supporting back row or blindside wing, nor the short controlled grubber which even if not leading to a try, can result in a loose scrum near the opponent's line. It was notable that in this spectacular game all tries except one originated in a quick heel from a loose scrum. We all look forward to more matches of this calibre during the rest of the season.

S. A. R. COOKE.

Guy's
R. Myall, D. Biggs, A. Allen, C. Wright, D. Fleming-Jones, H. Macgregor, J. Davies, E. Price, A. Fisher, P. Peace, A. Kingdom, R. Brown, D. Hendrick, I. Baker (Capt.).

GUY'S HOSPITAL v. CHELTENHAM

At Cheltenham 26th October, 1963.
Result: lost 3—9

Guy's went on to the field with only fourteen men. When news arrived that a train bringing Kerner, the selected left wing, would arrive one hour late, your correspondent took to the field, well padded, to play on the left wing.

The early play was marred by scrappy line-out work with Guy's men catching the ball but not being able to pass it back cleanly. It either emerged on the opposite side or arrived with two Cheltenham props in close pursuit. Close marking and tackling kept the play in the opposition half even though their backs received a greater supply of the ball. When, after twenty minutes, they followed up a long kick ahead, Cheltenham forced a scrum on the Guy's "25". A defender was dubiously adjudged off-side and the easy conversion was accepted.

The Hospital came back into the game undaunted and continued the hard pressure on the Cheltenham line. However, Cheltenham increased their lead with a longer penalty chance, which was again converted. The first half ended with a long passing movement involving the whole Guy's team, taking play from their "25" to two yards from the Cheltenham line, where a defender just stopped Wright from scoring.

The second half continued with Guy's doing all the attacking running. On one occasion Biggs took a reversed pass from the fly-half

and broke loose to find Allen up in support with a long overhand pass. The referee ruled that it was forward and ordered a scrum. A few minutes later Guy's scored when Morris converted a penalty from 30 yards out. Guy's redoubled their efforts and strong tackling forced Cheltenham back whenever they received the ball The game ended with Cheltenham scoring a try after a long kick ahead, to make the final score 9—3.

ARTHUR MORRIS.

Team.—R. W. T. Myall, A. M. Morris, A. J. Allen, C. J. Wright, D. A. Biggs, J. A. Edgar, H. MacGregor, J. E. Davies, E. S. Price, A. R. Fisher, P. K. Peace, A. J. Kingdom, R. Brown, D. Hendrick, I. A. Baker (Capt.).

ASSOCIATION FOOTBALL

GUY'S v. LONDON HOSPITAL

At H.O.P. 19th October, 1963.

Result: won 3—1

On a warm, sunny afternoon, Guy's met the London in the first round of the London University Cup. The game began with both sides playing crisp, attractive soccer and neither side having an obvious advantage. However, some five minutes after the start the London goalkeeper was called upon to save a fierce but accessible shot. He was unable to take the ball cleanly and while making a second attempt he collided with the Guy's left winger, Atkins, who was following up quickly. A goal was the net result and this was shortly followed by the goalkeeper leaving the field with suspected fractured ribs.

The London, reduced to ten men, were now faced with a Guy's team full of confidence and playing attractive football, made all the more effective by the promptings of Powell-Jackson, a valuable addition to the side at inside-left. Thus, it was no real surprise when the London defence, already playing at full stretch, were unable to stop Elias gliding past two men before hitting the ball firmly past the London goalkeeper.

After a short period of fluid, attractive football, with the ball being moved intelligently and quickly from man to man, it was no surprise when Cutler, showing nice anticipation, collected a pass on the edge of the penalty area, moved forward quickly and squeezed the ball past the advancing goalkeeper and inside the upright.

Thus Guy's closed the first half three goals up and, seemingly, with many more goals still to come. However, this was not to be, for, although Guy's were still playing attractive football, it was by no means as effective as during the first half. In fact, the Guy's forwards seldom seriously threatened the London goal, while the London, undoubtedly heartened by the tireless efforts of their left-half, were coming more and more into the game. The Guy's defence, with W Davies effectively blocking the centre and Sheridan playing one of his best games for the side, were able to contain the London with little difficulty, until they themselves made the mistake which gave the London a goal. Cochrane, who had just intercepted a London pass, attempted to pass back to W. Davies. However, it was wide and Davies could not reach it, but the London centre-forward could. He gathered the ball, made ground quickly and hit a hard, low shot past Parry. This spurred the London on to try for more goals, but the effects of having only 10 men were beginning to tell and they never came very close to scoring during the rest of the game. Guy's tried hard to put some snap into the attack; Shepherd, who had been having an unusually quiet game, and Atkins did their usual trick of swapping wings —as usual without effect; and we even saw Cochrane, the left-back, playing a position which could only be described as inside-left—the effect here not really being beneficial, but could have been disastrous against a full team. Thus the game ended with what could be described as a comfortable win for Guy's, but with an obvious lesson to be learnt—if they are to win the honours this season, of which they are so obviously capable, they must never ease off and lose the bite in their attack.

BRIAN MASON.

HOCKEY

GUY'S v. SOUTH SAXONS

At Hastings. 12th October, 1963.

won 5—1

Playing their first game of the season at Hastings, the 1st XI had a convincing win against a weak South Saxons side. The final result was never in doubt, except at the beginning of the match when, through slack marking in the defence, a South Saxons forward was allowed to have three consecutive shots at goal, his third attempt finally finding the net.

After this bad start the Guy's team settled down and began moving the ball about, so much so in fact that even the forwards got confused and this resulted in several wasted chances. However, goals did come through Strickland 2, Appleby 2, and Varnes, and had our luck been a little better we would have easily doubled our score

Liddiard, playing his first game for almost two years, showed that he still has the skill of a good hockey player and once he is fully fit should prove very useful to the team.

A word of thanks is due to the supporters on the touch-line whose vocal encouragement urged the team on and completely demoralised the opposition

D. LOADER.

Team.—Hirst; Loader, Haynes; Crafts, Harvey, Sedgwick; Winskill, Strickland, Varnes, Appleby, Liddiard.

October 12th

2nd XI v. South Saxons, away, won 5—0.
3rd XI v. Met. Police, home, lost 6—3.
4th XI v. Met. Police, away, lost 7—3.

GUY'S v. U.C.H.

At H.O.P.

Result: won 6—0

The 1st XI, following up their convincing win of the previous Saturday, beat U.C.H. by six goals. However, although the forwards were attacking all the time, they seemed unable to put the ball into the net. The inside trio of Strickland, Appleby and Bennett, showed signs of combining well together and with a bit more thought for others and less thoughts of trying to beat a defence single-handed, they should score the goals that were so lacking last season.

Even after a succession of short corners we still failed to score and it was from our first long corner that Strickland found the net with a beautifully controlled and accurately placed flick. Goals were still hard to find even though we remained completely on top; our half time lead being by a mere two goals.

In the second half Strickland again scored from a long corner and Bennett, playing his first game for the 1st XI, scored three goals—a noteworthy debut.

Appleby, who was nearly decapitated by a lifting ball during the game, had his revenge by scoring the other goal.

DAVID LOADER.

Team: Hirst; Loader (Capt.)., Haynes; Crafts, Brooks, Harvey; Winskill, Strickland, Appleby, Bennett, Carruthers.

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GUY'S v. ROMFORD

At Romford 19th October, 1963.
Result: draw 1—1

The forward line which had been so successful in the last two games had to be reorganised, due mainly to the absence of Liddiard and Strickland. It was therefore not surprising that during the first half especially they showed little result. The experienced Guy's defence did well in containing a fairly lively opposition but in a rare lapse they allowed a Romford forward to reverse stick the ball into the net from close range.

However, in the second half, the forwards combined more effectively and it was only an equally experienced and determined Romford defence that prevented Guy's from scoring. Finally Winskill, moving in at great speed from the right wing, collected a loose ball in the circle and hit it first time into the back of the goal. He went near to scoring another goal soon afterwards when after a dash down the wing he put the ball inches wide of the far post. Both defences held firm with Romford slightly the more relieved to hear the final whistle go.

DAVID LOADER.

Team: Hirst; Loader (Capt.), Haynes; Crafts, Brooks, Harvey; Winskill, Godfrey, Appleby, Sedgwick, Varner.

WATER POLO

GUY'S v. ST. MARY'S

18th October, 1963.
Result: won 4—2

1st v. St. Mary's

Team: Barnes, Barlett, Jones, Siegle, Valentine.

Scorers: Barnes 1, Valentine 3.

This match was the climax of a slow build up. For the last three years St. Mary's have been invincible and over that period Guy's has slowly strengthened. As with all good teams, they had to break up, and although the remaining St. Mary's team is good, it is not in the same world as its predecessors.

The Guy's team realised that they had the potential ability to give Mary's their first beating for years, and took the opportunity, admirably. Playing good polo Guy's cut an apprehensive St. Mary's team to shreds but goal punch was lacking, as was the final pass to goal.

In a goal-mouth scrap the first goal was scored and the second followed soon after in a similar scrap between Guy's centre and the stopper and goalkeeper of St. Mary's. Mary's scored a good goal to turn round 2—1 down.

In the second half the superior fitness of Guy's showed itself and goals came from good individual swims by Barnes and Valentine. The game closed as it had begun, with good polo being played. Victory was sweet, but even better was the fact that at last defeat did not seem bitter to St. Marys' mouths.

2nd v. Georges I.

Result: lost 2—3

Team: Foulds, McGlynn, Holland, Ashford, Tripp.

Scorer: Holland 2.

1st v. London

22nd October, 1963.
Result: draw 4—4

Team: Barnes, Valentine, Bartlett, Jones, Malpass.

Scorers: Valentine 3, Barnes 1.

This match was a clash of two styles. Guy's, with the greater speed, and London, with hard marking and sitting still. This is shown by the fact that three London goals came straight from the kick-off, after a Guy's goal.

Against tough tackling our speed counted for very little and we were very lucky to come away with a draw. This result now leaves us top of the league, but only on goal average. Unless we can score more goals we could easily be pipped at the post for the championship.

1st v. Kings I.

Result: won 9—2

Team: Barnes, Jones, McGlynn, Valentine, Wood G.

Scorers: Barnes 3, Jones 2, McGlynn 2, Valentine 2.

As seems to be the way with young teams the team played well throughout, but were unable to score prolifically enough during the first half. In the second half, Kings made the mistake of attacking and Guy's superior swimming power showed up and seven goals were scored in even time.

2nd v. Barts' II

Result: won 3—2

Team: Holland, Bartlett, Foulds, Wood, Ashford.

Scorers: Bartlett 2, Holland 1.

CROSS COUNTRY

12th October, 1963.

Relay Race, Parliament Hill.

Guy's 1st—

V. Holt, 9 min. 13 secs.; P. Whitting, 9:02; M. Hutchinson, 9:40; A. Lakin, 9:18; J. Wheeler, 9:12; A. Brown, 9:54.

Position 17th.

Guy's 2nd—

C. Hone, 10 min. 5 secs.; D. Cooper, 9:49; E. Bowen-Jones, 10:05; R. Wilson, 9:47; D. Vernon, 9:50; R. Jones, 9:53.

Position 30th.

38 teams were competing, and the winners were Borough Road College. Guy's took the same position as last year.

16th October, 1963.

v. Latymer.

Team, with position.

J. Wheeler (1st), A. Lakin (3rd), A. Brown (7th), R. Wilson (78th), E. Bowen-Jones (11th), C. Coffin (13th), R. Jones (15th), N. Tilling (10th).

Result, Latymer 36 pts., Guy's 43.

GOLF

At Sandy Lodge G.C. 9th October, 1963.
Hospital Cup 2nd Round v. Charing Cross Hospital

D. Adams, won 4/3.
D. McCay, won 4/3.
B. Beven-Jones, won 1 hole.
M. Brummitt, won 5/4.
E. Baird, won 9/8.

Result—Guy's 5, Charing Cross 0.

At Sandy Lodge G.C. 9th October, 1963.
Match v. Imperial College

D. Miller, won 2/1.
D. Carle, won 7/6.
A. Frazier-Modie, won 2 up.
A. Kerr, lost 5/4.
P. Mewton, lost 7/6.
G. Ritchie, won 6/4.
A. Phillips, won 7/6.
G. Williams, won 5/4.
F. Fernworth, lost 1 hole.

Result—Guy's 6, Imperial College 3.

HOSPITAL INFORMATION

APPOINTMENTS VACANT

GUY'S-MAUDSLEY NEUROSURGICAL UNIT

Applications are invited for the resident post of **Senior House Officer** for the six months commencing 1st December 1963. The Unit, which is housed in the Maudsley Hospital, serves both Guy's Hospital and the Bethlem Royal Hospital and the Maudsley Hospital. Applications should be made by **16th November, 1963,** to L. H. W. Paine, *House Governor and Secretary, Maudsley Hospital,* Denmark Hill, S.E.5.

GUY'S HOSPITAL, S.E.1

Applications are invited for the posts of **Medical Registrar and Junior Medical Registrar,** with duties to commence as soon as possible. Appointment in the case of Registrar until 30th September, 1964, in the first instance; in the case of Junior Registrar until 30th September, 1964. Application forms are available from, and should be returned to, the Superintendent, Guy's Hospital, S.E.1., not later than **8th November, 1963.**

NURSING NEWS

Entered

Staff Midwife J. Horner to Victoria.
Staff Nurse A. Begg to Theatres.
Staff Nurse P. Darnell to Naaman.

Left

Sister E. Grimwood from Nurses' Home.
Staff Nurse R. Allan from Nuffield House.

PERSONAL

Special rates for Guy's Staff, Students, Nurses and Subscribers to the Gazette. 5 words 10s. 6d. 15 words 21s. 0d. Box Numbers 1s. extra.

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Dr. and Mrs. H. C. Evans, 16, Copse Edge Avenue, Epsom, Surrey. Tel: EPSOM 5520.

Dr. Gwilyn Evans, c/o Ministry of Health, North Western Divisional Medical Office, 53, Whitworth Street, Manchester I.

Dr. G. T. T. Forrester, King George VI, P.O. Box 30024, Nairobi, Kenya.

Dr. and Mrs. R. S. Greenwood, Flat 25, Pointblock, Kenilworth Court, Warwick Road, Coventry.

D. K. Hardy, L.D.S., R.C.S., Medical Department, Gillette Industries Ltd., Great West Road, Isleworth, Middlesex.

R. E. C. Hayman, L.D.S., R.C.S., Green Corner, Pen Selwood, Wincanton, Somerset.

W. F. Jaworski, Esq., 148, Grange Road, Letchworth, Herts. Practice: 123, Norton Way South, Letchworth, Herts. Tel: Letchworth 12.

Dr. and Mrs. Maurice Lessof, 32, St. Mary's Grove, N.1. Tel: CAN. 0919.

Dr. John Leyshon, "Berwyn", Penrhos Road, Bangor, N. Wales.

Dr. J. C. Oakley, 12, Orlick Road, Chalk, Gravesend, Kent. Tel: Gravesend 63203.

Dr. and Mrs. G. M. Preston, 180, Kennington Park Road, S.E.11. Tel: RELiance 1374.

Dr. W. Pryse-Phillips, Benenden Chest Hospital, Nr. Cranbrook, Kent. Tel: Benenden 2110.

E. Walrond, M.B., B.S., Alton General Hospital, Alton, Hampshire.

Dr. and Mrs. J. S. M. Zorab, Silver Birches, 32, Glen Eyre Road, Bassett, Southampton. Tel: Southampton 69168.

MARRIAGES

BUXTON—MUIR.—On 7th September, 1963, at Richmond, Surrey, Dr. John D. Buxton, F.F.A.R.C.S., *to Susanna Muir,* S.R.N., S.C.M., M.T.D.

BIRTHS

PITT-PAYNE.—To Dawn and Bruce Pitt-Payne, *a daughter, Deborah, on August* 3rd, at Beckenham, Kent. Sister for Mark and young Bruce. Present Address: Neilburg, Saskatchewan, Canada.

GUY'S HOSPITAL GAZETTE

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Editors *W. G. Reeves*
T. C. Davis

Sports Correspondent *E. Tiller*

Guy's Hospital, London

PASSIM

World Health

It takes five or six years of study at university to become a doctor. During this time one is met with such a crowd of facts and ideas that there is little time to think outside the confines which medicine takes as its immediate and close consorts. Medicine does appear fascinating, in practice, in specialised subjects and in research but little is heard of its place in the wider fields such as U.N.E.S.C.O. and the World Health Organization. Here the problems met with will be different and it would need some years of teaching and practice in general medicine before one could think in terms of malarial epidemics and their control in East Asia and at the same time of the difficulties of living thousands of feet up in the Andes and trying to improve the environmental condition and so the health of a poorly nourished and perhaps illiterate community. These are just examples and it would not be reasonable to expect tuition on these special subjects in the course of clinical study. However, because of the very largesse of our course one does not appreciate these problems, nor even perhaps recognise that they exist. Is there a W.H.O. centre in London? Are there any problems relating to it in this country and if so are we interested in them? These are all questions which might be asked by any enquirer but we are sure that interesting answers could be found by most students if they were prompted in some small way to ask.

Working for either of these two United Nations organizations could prove novel and invigorating: with the recourse to travel and new and changing conditions it would not suit the majority but it would widen the mind and jar the animus of everyone to know a little about its rôle today. It is idle to say that their magazines are published and one has only to read, for by the very nature of their structure it would be too much to be taken at one, two or even three glances.

In a diminishing world with frontier encroaching frontier, jets and drugs and internationalism facing feudalism it is tragic to hear of the malnourishment in India and the problems of a region devastated by flood or earthquake. One almost feels that nature is taking a swipe back at us for our smugness and our progress. A problem such as this must have relevance to us not only as doctors but also as citizens, and we should hear about and try to understand the difficulties facing medical teams under such conditions and how they will cope with them.

In this issue we include an article on this subject which traces the history and tells of some of the background work being done today in the World Health Organization itself and in its affiliated organizations.

GUY'S DIARY

NOVEMBER

EXHIBITION.	*The Jaw.*		
18th	M.	1.00	Dr. DEUCHAR. Clinical Lecture. *Heart Sound.*
19th	T.	1.00	Dr. EVANS. Clinical Lecture. *Multiple Choice Questions.*
20th	W.	1.00	Mr. R. A. CAWSON. Dental Clinical Lecture. Dental Theatre. *Ulcers of the Mouth.*
21st	Th.	5.00	Neurosurgical Round conducted by Mr. SCHURR. Clinical Theatre.
21st	Th.	1.00	Mr. LAWRIE. Clinical Lecture. *Ulcerative Colitis.*
22nd	F.	1.00	Dr. HALL. Clinical Lecture. *Intubation—How and When.*
23rd	S.	10.00	Clinico-Pathological Meeting. Clinical Theatre.
25th	M.	1.00	Mr. KINDER. Clinical Lecture. *Incontinence of Urine.*
28th	Th.	1.00	Mr. HUDSON. Clinical Lecture.

DECEMBER

2nd	M.	1.00	Mr. CANN. Clinical Lecture.
3rd	T.	1.00	Dr. BISHOP. Clinical Lecture.
5th	Th.	1.00	Dr. TROUNCE. Clinical Lecture.
6th	F.	1.00	Dr. GRIMBLE. Clinical Lecture.

A Memorial Service for Sir William Kelsey Fry, C.B.E., M.C., M.D.S., F.D.S., F.R.C.S., will be held at St. Clement Danes Church, Strand, on Wednesday, 20th November, at 12 noon. Owing to rebuilding there will be no memorial service at Guy's Hospital.

NOTICES

Pupils' Physical Society

The next meeting of the Society will be a combined Clinical Meeting with St. Thomas's on Tuesday, November 19th, at 5.30 p.m. Cases will be shown in the Demonstration Room, second floor, New Guy's House, and will be discussed after dinner, at 8.0 p.m. in the Quiet Games Room, Students' Club.

There will also be a Quiz, for which a book token prize will be awarded.

On Thursday, November 28th, Guy's people are invited to a symposium on *Autoimmune Disease* to be held at St. Bartholomew's Hospital. Details of this meeting are to be found on the notice board in the College.

All clinical students will be welcome at both these meetings.

Guy's Catholic Society

Mr. Robert Mellish, Socialist M.P. for Bermondsey, will be giving a talk at Guy's on Monday, November 25th. His subject will be '*The Catholic in the Socialist State*'.

The meeting will begin at 8.0 p.m. in the Upper Lounge of the Students' Club. Coffee will be served. Everyone is welcome.

William Kelsey Fry

An Obituary

In the death of Sir William Kelsey Fry, which occurred at his residence at Bexhill on October 26th, at the age of 74, the profession has lost a man whose ability and character had long won him the highest distinction and respect at home and abroad.

Born in 1889, the son of Edmund Fry, of Greenwich, he went to school at Hurstpierpoint and entered Guy's Hospital as a student in 1908. He followed both the medical and dental courses and qualified M.R.C.S., L.R.C.P. in 1912 and L.D.S., R.C.S. in the following year. In 1914 he was a dental house surgeon and at the outbreak of war joined the R.A.M.C. as a medical officer, serving with the Royal Welch Fusiliers. On active service he was wounded and gained the Military Cross. It was during this time that his particular interest was drawn to jaw injuries and he was impressed with the tragic mortality which could so easily follow their unskilled handling. His subsequent appointment, first at the Cambridge Hospital, Aldershot, and then as senior dental surgeon to the Queen's Hospital for Facial Injuries at Sidcup, established that remarkable collaboration between the plastic surgeons headed by Harold Gillies and the dental surgeons which was to prove so fruitful in its outcome. Though certainly not the only centre for the treatment of facial injuries, Sidcup became more evidently the foundation and model of subsequent developments in the United Kingdom in this field. It was there that Kelsey Fry displayed the remarkable combination of mechanical ingenuity and technical skill with surgical and medical acumen which made his contribution to the growth of maxillo-facial surgery such a great one. The Cartwright Prize of the Royal College of Surgeons was later awarded for his essay on this work.

At the end of that war he returned to Guy's to take up the post of Demonstrator in the Mechanics Department to which he had been appointed in 1914. Now commenced a period which will be well-remembered by many hundreds of old Guy's alumni. In charge of the teaching of dental prosthetics and allied subjects, he was not then an outstanding lecturer but became a brilliant teacher of small chair-side and bench-side groups. He had a special gift, which he always retained, of arousing enthusiasm and loyalty in those who worked under him and of kindling some interest in almost the dullest. At this time he was also building up a private and consulting practice where it always remained, not in the fashionable West End medical area but next door to Guy's Hospital. He became known as an expert in the dental treatment of cleft palates and with Gillies devised a combined surgical and prosthetic approach. He was appointed to the consulting staff of Guy's Hospital and as the years passed his reputation as an oral surgeon continually grew.

It was natural that as the danger of another war increased he should have been, with Mr. W. Warwick James and the late Sir Harold Gillies, among a small group consulted by the Government on plans for the treatment of war injuries to the face and jaws. In the event he became the adviser to the Health Departments as regards the establishment and running of the dental and oral surgery side of all the Plastic and Jaw Injury centres set up in the United Kingdom under the Emergency Medical Service. All those who were engaged in this work will remember with pleasure and affection his periodical and often unexpected visits, sometimes in very unsettled circumstances, in which he so frequently disentangled an administrative entanglement, solved a clinical problem, and carried from one unit to another news of the best advances made at each. No one could have been better suited to the job or have done it better. At East Grinstead in particular, he had built up what already amounted to a post-graduate school and his name on a ward there commemorates his special connection with that centre. His co-authorship of two volumes on the treatment of maxillo-facial injuries set on record the experience obtained up to that time and was of great value in making it quickly available to the many military and civilian teams which required it. As consultant to the Services and particularly to the Royal Air Force, he was no less successful and his institution of Dental Hygienists in that Force was only one aspect of the detailed planning which resulted in such a high standard of clinical care.

At the end of the war he received the rare honour of being elected an Hon. Member of the British Dental Association and in the same year became a Commander of the Order of the British Empire. He was closely concerned with plans for setting up a Faculty of Dental Surgery within the Royal College of Surgeons of England and in 1950 became its second Dean, an office which he filled with conspicuous distinction. His services to the Faculty and to dentistry were recognised once more when, in 1954, he became the first recipient of the Colyer Gold Medal, an honour which his particular regard for Sir Frank Colyer made especially valuable to him. On reaching the age

of 60 he retired from the active staff of Guy's Hospital (although he remained one of its Governors) and joined that of the Eastman Dental Hospital which was becoming metamorphosed into an Institute of post-graduate dental study under the Post-graduate Medical Federation of the University of London. His oral surgery clinic there attracted post-graduates from all parts of the world and there is no doubt that his work in collaboration with the then Director, Professor Frank Wilkinson, played a great part in the rapid development of the Institute. While post-graduate education became one of his greatest interests, he never lost his interest in undergraduate teaching. He was one of the very few dental surgeons to serve on the Medical Sub-committee of the University Grants Committee and it was due in great measure to his persistent representations over many years that the needs of the undergraduate schools were eventually appreciated. For the development of a separate Dental Sub-committee, and a building and expansion programme he is one of those to whom we are most indebted. He was also one of those who advised the Nuffield Foundation in the early days of their support of dental education and research, and helped to launch the very successful schemes which are still in operation. In view of his previous relationships with the Ministry of Health it was inevitable that his advice should be sought (though not necessarily accepted) on many dental problems connected with the institution of a National Health Service. In a matter so wrapped in controversy which at times aroused bitter diversity of opinion in the profession, this must have been a difficult and often unpleasant task. It is very certain that he regarded the welfare of the profession as inseparable from the welfare of the public. This led him to support several ideas which were at the time very unpopular, though some of them, such as the use of dental hygienists in the public services, eventually won general approval. Especially dear to him was the idea of eventually obtaining a standard of dental care in all general hospitals which would be comparable with the best specialist and routine care available in other departments, both as regards the facilities provided and the qualities of the staff. He did much to promote this end, a long-term project of which we still seek the completion. A very experienced examiner of undergraduates, he also took a keen part in the final F.D.S. examinations for those aspiring to attain consultant status; and former candidates in many distant parts of the world will remember his courteous but shrewd questioning.

In 1951 he received the honour of knighthood and soon afterwards the gift of his portrait by subscription of hundreds of his old students at Guy's. Probably few honours touched him more than this last. He was awarded honorary degrees by the Universities of Durham and McGill and was elected F.R.C.S.Eng. and F.D.S., R.C.S. He had been President of the Odontological Section of the Royal Society of Medicine and was an honorary fellow of this and many other professional societies and a Fellow of the American College of Dentists. He was also the first dental surgeon ever to take the Chair at the Council Club of the Royal College of Surgeons of England.

While he continued to play a leading part in professional affairs almost up to the end and did not spare himself, he drew strength from a happy family life and the home in Kent where, in his beautiful garden, he raised his cherished carnations. Many a guest from overseas and many of his friends in the United Kingdom will like to remember him as they saw him there, tapping his pots, talking on the terrace, or surrounded by his family and grandchildren.

In 1916 he married Ruby Preston and had one son. To both of these we extend our sympathy on the passing of a man who earned the honour in which he was held and who made a very personal contribution to the status and dignity of his profession.

NOTICES

Guy's Hospital Bournemouth and Wessex Society

The Annual Dinner will be held on Friday, November 22nd, at 8.15 p.m. at the Bourne Hall Hotel, Poole Road, Bournemouth. Professor W. R. Spurrell will be in the chair, and it is hoped that all Guy's medical and dental men and women in the area will take this opportunity of renewing old friendships.

Will anyone who has come to live in the area, i.e., Hants., Dorset, Wilts., etc., since last year, please let me have their name and address.

N. J. WOOD, *Hon. Sec.*

51, Lansdowne House,
Christchurch Road,
Bournemouth (Tel.: 25847).

Guy's Hospital Photographic Society

Colour Competition

This will be held at 5.30 p.m. on Thursday, 28th November, in the Clinical Theatre, New Guy's House. It will be in two sections:—

1) Holiday Photographs.
2) General Photographs.

There will be an entry fee of 4d. per photograph to enable prizes to be given. For a batch of five the fee will be 1s. 6d. The competition will be judged by the audience, so if you are unable to enter you are invited to go along and assist in the judging of the pictures. Those wishing to enter should bring their entries along on the day, or, preferably, to help with the organisation they may be left with the secretary about a week before, or put in the Society rack in the College.

J. S. GREGSON,
Hon. Secretary.

Art Society

A meeting of the Art Society will be held on Thursday, 21st November, at 5.30 p.m. in the Dental Theatre. The speaker will be Mr. Patrick Trevor-Roper, consultant ophthalmologist at the Westminster and Moorfields Hospitals, who will speak on:

" The Influence of Eye Disease on the Artist ".

JENNIFER TOWNSEND,
Hon. Secretary

World Health Organisation

by J. A. D. ANDERSON

" Health is a state of complete physical, mental and social well-being, not merely the absence of disease and infirmity "—extract from preamble to the constitution of W.H.O.

The constitution of the World Health Organisation (W.H.O.) was signed in 1946 and for the past 17 years its international character in working for the control of disease and the relief of suffering has continued to develop. This development has occurred in the face of changing relationships in the political arena, and at times co-operation in the field of health has been one of the few glimmers of hope in a a world rent by the cold war and by nationalist prejudices.

Historical Background

Co-operation in health matters stems from an acceptance that contagious diseases and pestilences are enemies common to all mankind. The Bible (II Kings 19 v 35) and historical literature contain many examples of the powerful effects of infectious diseases.

In the Middle Ages communities protected themselves against contagion by two methods. Firstly, an area known to be affected by disease was isolated and in some cases an armed guard was placed round its borders to prevent emigration; encirclement in this way was known as "cordon sanitaire". A second method, the origin of which is commonly attributed to the Venetians (1423), was that of preventing immigration of people and goods from foreign parts until they had been isolated for a period of forty days.

The Italian word "quaranta" (forty) is still used in the term quarantine and regulations of this kind were introduced to Britain by the Scots in 1564 and by the English 21 years later. These measures were incorporated into a series of Acts of Parliament and the Quarantine Act of 1825 still prescribed the death penalty under certain circumstances for those who contravened the law.

These rigid restrictions, however, failed to save the United Kingdom from the cholera epidemic of 1831. It became apparent from this experience that quarantine alone was not an effective method of protection, and so the powerful guilds of merchants began to exert pressure on the government to review the laws which caused such costly delays to traders. Concurrently there was a strong feeling of revolt against the bribery and corruption which were associated with the enforcement of the regulations.

In 1851 the first international conference on quarantine was held in Paris, at which twelve States were represented. The convention which was drawn up by the conference was ratified by only three countries which did not include Britain. During the next half-century there were no less than nine subsequent conferences; each one contributed a little to increased understanding, but their scope was almost

entirely confined to plague and cholera. A further conference in 1903 consolidated the recommendations of the previous ones, while that in 1907 proposed the creation of "l'Office International d'Hygiene Publique" ("The Paris Office"). This was a central office to which information about pestilential diseases was sent and from which bulletins were issued.

The thirteenth international sanitary conference of 65 nations was held in 1926 and resulted in the convention of that date which still forms the basis of the regulations about international quarantine. Broadly, this convention stipulated that cases of cholera, plague, smallpox, typhus and yellow fever should be notified to the Paris Office. Ships sailing from countries where there were such cases were to be regarded as potentially infectious. Agreement was also reached on the steps to be taken to reduce the spread of infection locally and the quarantine measure to be followed.

By this time the Health Organisation of the League of Nations had begun to undertake a notification service of other epidemic diseases including some which do not have an infectious origin. Liaison was established between the two bodies and also with the Pan-American Sanitary Bureau, an autonomous but parallel organisation for the western hemisphere. Subsequent conferences have studied the special problems presented by air travel and have recommended the addition of relapsing fever to the five major diseases mentioned above.

The spread of epidemic diseases and their control were the driving forces in bringing about agreement among the nations. The co-operation which had stemmed from fear began to show itself in other ways. Representatives at the Paris Office had concerned themselves with other matters such as international standards for hormones and vitamins, and also the free passage of other medical and scientific information among the nations. This climate of co-operation and goodwill was inherited by the Health Organisation of the League of Nations. It took over some of these tasks and also those of helping under-developed countries to combat both infectious and non-infectious diseases. With the outbreak of the second World War the Health Organisation of the League virtually went into hibernation. It emerged only to offer assistance to the United Nations Relief and Rehabilitation Association (UNRRA), which spent a total of nearly 168 million dollars on health measures. The League's health organisation then became incorporated in that of the United Nations, known to us as W.H.O.

Administration

There are, at present, 118 member countries in W.H.O. and each member contributes to the annual budget of some 20m. dollars according to its means. There are also voluntary contributions to a fund for health promotion and a grant from the Technical Assistance Fund of the United Nations which help to give additional assistance to underdeveloped countries. It is signficant that application for membership has been one of the first acts of the newly-formed

countries during recent years. Each member country is entitled to a wide range of available services; some of these services are required by all members on a global basis, some on a regional basis, while others are more restricted and local in their application.

Each member is entitled to a single vote in the World Health Assembly which supervises the executive and financial policies of the Organisation. The Assembly designates 24 countries, each of which nominates one individual to serve on the executive board for three years. The Assembly usually meets once and the board at least twice during the course of a year; the latter can make emergency decisions between meetings of the former, but changes of policy require a majority vote of two-thirds of the main assembly.

The day-to-day running of W.H.O. is in the hands of a director general in Geneva; he has four assistants under him. One is responsible for accounts, administration and management, which includes the despatch of supplies. A second is concerned with communicable diseases; international quarantine and the six major infections form a substantial part of the work, but leprosy, malaria, tuberculosis and veterinary diseases are included. Environmental hygiene which deals with water supplies, sanitation, air pollution and vector control also come under this heading. The third assistant is mainly concerned with education. This includes the training of doctors, nurses and auxiliaries, and also the health education of populations. The control of non-communicable diseases such as cancer, mental health and nutrition are in this third administrative section, through which W.H.O. works closely with the U.N. Food and Agriculture Organisation (F.A.O.). The fourth main group of tasks undertaken by W.H.O. deals with the study of statistics and epidemiology, and also the standardisation of biological products and pharmaceuticals.

In order to adapt the work of the organisation more effectively to local conditions, the globe is divided into six regions, each with its own regional office. The African Regional Office (AFRO) has the smallest population of some 155 millions; the headquarters is sited in Brazzaville. The next in size is Eastern Mediterranian (EMRO), sited in Alexandria and with an estimated population of 206 million. The Americas (AMRO, population 400m.) based in Washington, S.E. Asia (SEARO, 605m) at New Delhi, and Europe (EURO, 677m.) at Copenhagen, come next in order. The Western Pacific Regional Office (WPRO) with its headquarters in Manila, is responsible for the region with the largest population of about 900 million.

Achievements and Aims—International Standards

Much of the work of W.H.O. is of value to all the member-nations. The notification of large or small outbreaks of the pestilential diseases and the administration of the international quarantine service are obvious examples. In addition to these, however, the epidemiology of both infectious and non-infectious diseases are of universal interest. Before such work could be undertaken on an international basis it was necessary to classify diseases, and the pro-

duction of the International Statistical Classification of Diseases, Injuries and Causes of Death in 1948 was one of the earliest achievements of W.H.O. This has since been revised in 1957.

Another important area of international co-operation which was inherited from the League of Nations was that of defining standards for biological products. Antitoxins and agglutinins, vaccines and vitamins all have to be standardised, so, too, do many other therapeutic substances. International agreement on the pharmacological actions of standard doses is essential if drugs prepared in one country are to be used subsequently in another. The same standardisation is necessary if physicians of different nations are to be able to understand each other and discuss therapy and prophylaxis on a common footing.

Apart from the question of dosages it is also important that there should be some agreement internationally on the nomenclature of certain potent drugs of primary importance. This work has also been undertaken by W.H.O.

Conferences

Conferences and technical meetings are of value to most member nations of W.H.O. These are held in all parts of the world and on many and varied subjects from "Calcium Requirements" in Rome to "Nursing Auxiliaries" in Tokyo and from "Radioisotopes" in Mexico to "Health Auxiliaries" in Khartoum. Many conferences are held in Geneva, one of the most recent of which was on the future of the general practitioner. At this meeting emphasis was laid on the dilemma of the family doctor, torn between two ideals. He tries to be guide, councillor and friend and to give cradle to grave service on the one hand; at the same time he is endeavouring to fulfil a demand for better and more scientific medicine.

Local Projects

Ventilation of problems at conferences leads almost naturally to further research and improvement of services. In 1961 W.H.O. sponsored 825 projects in 137 different countries. Details about many of these projects are to be found in "W.H.O. Chronicle", while original papers, mainly of an epidemiological type are to be found in "The Bulletin of the World Health Organisation".

The organisation never forces its services on member nations. The aim is to supply technical assistance to a country in order to develop a project. Thereafter it is hoped that trainees from the recipient state will be able to take over, and that the project will eventually become incorporated into the health service of the country concerned.

One of the most frequent demands made by governments of developing countries is for assistance in training public health workers at all levels. In other instances a country may ask for help in carrying out an organised plan against a particular disease or health hazard. Some of these projects are summarised in World Health,

July-August 1962; this issue is entirely devoted to a description of W.H.O. and its workings and two of the projects described in that journal have been summarised here.

W.H.O. Fellowships

The need for advanced knowledge in new states cannot be met entirely by sending teams of experts into the countries to deal with particular problems. It is necessary, in addition, to let doctors and other health workers attend post-graduate schools and colleges, particularly in the large European and American centres. Over half of these fellowships are awarded to doctors, the principal subjects being Public Health (48%) and Communicable diseases (25%). Table 1 shows the distribution of fellows from the different regions and the areas which they visited in 1961.

Europe and America are the main receiving regions; between them they took 80% of the fellows studying outside their own region. W.H.O. is encouraging the development of post-graduate schools in other parts of the world and it is hoped that the traffic will become more evenly balanced in due course.

Table 1

W.H.O. Fellowships 1961

Regions to which Fellows sent	*Regions from which Fellows came*						*Total Fellowship Places at Teaching Centres*
	AFRO	EMRO	AMRO	SEARO	EURO	WPRO	
AFRO (Brazzaville)	73	0	1	2	3	0	79
EMRO (Alexandria)	15	188	3	6	8	8	228
AMRO (Washington)	27	22	189	24	36	40	338
SEARO (New Delhi)	7	11	2	46	1	30	97
EURO (Copenhagen)	92	143	15	39	450	47	786
WPRO (Manila)	7	13	1	2	0	91	114
Total Fellowships awarded	221	377	211	119	498	216	1642

Malaria in Mexico

In 1955 the Mexican government requested help with a plan to eliminate malaria from an area of about one million square kilometres, with a population of about 18 million. W.H.O. provided a small team of expert workers, including one medical officer and one malariologist, and pilot studies were made to discover the most effective methods of clearing the area. Concurrently, professional and auxiliary workers recruited locally were trained in the techniques to be employed.

Two years later an eradication programme covering the whole country was instituted. Spraying, drainage and mass therapy were the main weapons employed and the whole project, which is now nearing successful completion, cost over 60m. pesos (£1.7m).

Yaws in the Pacific

In 1954 yaws was endemic in the islands of the South Pacific. It is an infectious disease manifesting itself by multiple pustular lesions of the skin and believed by some to be the disease of Job. The causative organism, a spirochaete *Treponema pertenue,* is sensitive to Penicillin.

A plan was evolved to train national personnel in the epidemiology and treatment of the disease. Once the treatment was under way in one area, the W.H.O. team consisting of a doctor, a serologist and a nurse moved on to the next territory. The prevalence of active yaws has been reduced in the areas concerned from about 10-15% down to less than 0.1% as a result of this campaign.

Aid in Emergencies

Projects such as those described above and fellowships are organised by W.H.O. as integral parts of its long-term policy, but machinery exists for immediate assistance in fighting pestilential disease.

The first test of this service occurred in 1947, shortly after the organisation was founded, when a cholera epidemic struck Egypt. Medical and epidemiological advice and supplies of drugs and vaccines were provided.

The most extensive emergency operations has been conducted in the Congo following the departure of European doctors at short notice in 1960. At that time there were no Congolese doctors in the country and more than 20 nations provided medical teams which helped to work out an emergency plan. It was impossible to offer proper medical cover to a country which is as extensive as the whole of Western Europe, but short courses were instituted to instil some of the rudiments of medicine into those with suitable backgrounds.

Concurrently, a long-term plan was put into operation to provide the Congo with its own medical services. Fellowships were awarded to "assistants medicaux" to enable them to qualify as doctors and a medical school staffed by W.H.O. personnel was established near Leopoldville at Lovainium University.

Co-operation with other Agencies

Whenever the situation demands it, W.H.O. actively co-operates with other U.N. agencies, one such is the Food and Agriculture Organisation (F.A.O.) concerned with the current Freedom from Hunger Campaign. Diseases such as kwashiorkor, pellagra, rickets and anaemia are direct consequences of inadequacies of diet; infectious diseases such as tuberculosis are more prevalent among those who are chronically undernourished on account of lowered resistance. It follows that the problems of famine are closely associated with those of health and that neither organisation could operate to full efficiency without the other.

Both W.H.O. and F.A.O. work in co-operation with other U.N. organisations; these include United Nations Educational and Scientific Organisation (UNESCO) and United Nations International Children's Emergency Fund (UNICEF). Close co-operation is also maintained with International Red Cross, especially in times of disaster.

Staff of W.H.O.

Apart from those employed temporarily on projects in different parts of the world and those who are awarded fellowships for a short period, there is a medical and administrative staff of about 2,500 working in Geneva or in one of the six regional centres; many of these are recruited locally. The constitution of W.H.O. dictates that recruitment to staff must be based on geographical representation and the annual report of 1962 indicates that only some 230 of these are subjects of the United Kingdom.

The organisation has a wide choice and it follows that it is in a position to command the highest possible standards not only in terms of professional qualifications, but also in practical experience. At present it is fair to say that the emphasis is mainly on those with training in preventive medicine. It follows, therefore, that opportunities for employment on a long-term basis seldom occur and any vacancy is usually over-subscribed.

It may sometimes be possible for a young doctor to work on one of the projects mentioned above, particularly in those which have to be organised to combat some emergency. Appointments may only last a year or two and continuous employment with W.H.O. is unlikely. Those who try and return to wholly clinical appointments may well find themselves far behind in the race for survival. There are still influential people, who pay lip service to the work of W.H.O., but who inwardly adopt the attitude that doctors who go to underdeveloped countries either do so to escape from the G.M.C. or because the liquor is cheap.

The practical experience gained by working in projects of this kind is of immense value, but the benefit is greatest to those whose interests lie in or near the field of preventive medicine. Those who return and seek work in departments of social medicine or in epidemiological research are usually more welcome for having first-hand knowledge of how control and prevention can be applied to a major epidemic.

This brief account is intended to give an overall picture of the background, administration and aims of the World Health Organisation. Further information can be obtained from the references mentioned below and also from the U.K. Committee for W.H.O., which has its office at the London School of Hygiene and Tropical Medicine, Keppell Street, W.C.1.

REFERENCES

GOODMAN, N. M. (1952), *International Health Organisations and their Work;* London.

WORLD HEALTH ORGANISATION (1957), *International Statistical Classification of Diseases, Injuries and Causes of Death;* Geneva.

WORLD HEALTH ORGANISATION (1962), *World Health,* July-August; Lausanne.

WORLD HEALTH ORGANISATION (1963), *Official Records of W.H.O.* 123. *Annual Report for* 1962; Geneva.

Quodlibet Society

On November 7th the Quodlibet Society was addressed by Mr. McWilliam on " Pan-Africanism—its Economic and Political Implications". This talk was one of sense, rather than the sensibility of the first, in the series on Africa.

Mr. McWilliam, a " merchant banker", who has worked in his home country, Kenya, as well as in the Rhodesian Copperbelt and Ghana, started by likening the problem in Africa to that of the Robbins Committee: quality or quantity. The emergent states are inherently poor, and there has been lack of investment, and often withdrawal, of foreign capital in them. Their governments have felt that Africanisation is best obtained by Nationalisation, which frightens away skilled European aid, and since Nationalism is a vote-catcher, the multiracialist society is a pipedream at present. But the old colonial powers must support these countries' budgets and invest capital, perhaps through the United Nations, to avoid the label of Neo-Colonialism. This latter fear explains Africa's soliciting of Eastern aid, and we must help tactfully if we wish them to remain sympathetic to the West. Pan-Africanism appears on paper to strengthen the countries, but, in fact, distribution of subsidies is wider if it is direct to the individual communities.

Aristotle gave three criteria for democracy, one of which was that a democratic nation had to be self-supporting; until this occurs, West Africa cannot be Westminster.

C. P. W. WARREN.

REPRINTS

The first fourteen articles in the series " *A Scientific Background to Clinical Medicine*", are now available in reprint form at one shilling each. These and subsequent reprints in this series may be obtained on application to the Manager, Gazette Office.

BERMONDSEY & SOUTHWARK—VI

Their History

PART 2 - Around Guy's for three centuries

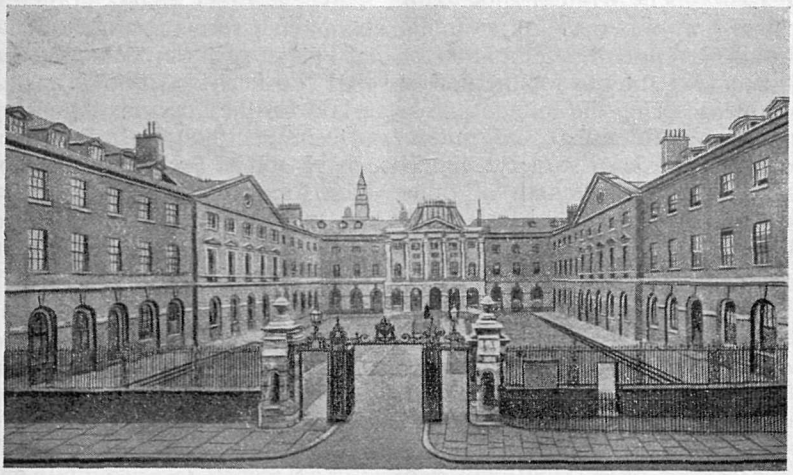
An eighteenth century map of South London would show two institutions side-by-side; Guy's Hospital and St. Thomas's Hospital; close by would be the King's Bench, the Marshalsea and the White Lyon prisons. At the back of the houses and narrow streets the fields began with open ditches or sewers and sluggish foul streams. Snow's Fields in the East were as well known as St. George's in the West. Long Lane ran from St. George's to Bermondsey Church and contained few houses. The most crowded part of Southwark proper was Tooley, or St. Olave's Street and by now there was no vestige left of the former palaces of the noblemen and Bishops. At every step one came upon the entrance to a narrow, mean courtyard where there was no water supply or lighting. Bankside was deserted. None of the fine theatres remained, no poets, actors, or musicians: no bears to bait and no Paris Gardens. The High Street of Southwark was a crowded thoroughfare, an immense number of coaches, carts and wagons passed up and down every day, stopping at the inns. Outside their courtyards whole companies of thieves would hang about waiting for the chance to carry off something unconsidered or forgotten. Pick-pocketing was another favourite profession of the time, the confidence tricksters, the ladies with ready smiles, the tramps and the rogues; all alike found it a happy hunting, and to be hunted, ground.

We have already seen in Part I how the Inns of Southwark were used as gathering and starting places for the pilgrims, but the medieval inn was not much like that of later times. It contained a common hall and a common dormitory, with another for women; there was also a covered place for goods and a stable for the horses. It is melancholy to walk down the High Street now and to reflect on the inns which, until comparatively recently, were still standing. For the need of an inn at Southwark is gone. The High Street has become the shop and the provider of everything for the people of the Borough.

Originally an " almery " attached to the Priory of St. Mary Ovary, St. Thomas's Hospital was refounded on an independent basis by the Bishop of Winchester about the year 1215. It was then primarily a religious institution for the lodgement of the poor and infirm, under the control of a Master and brethren of the Augustinian Order; the latter were assisted by lay sisters. The poor were received as well as those pious ladies wanting to withdraw from the world. During the reign of Edward VI the Lord Mayor of London took it over and it was re-named the King's Hospital; however, the old name still persisted amongst the people and finally an adviser suggested that it should always be known as St. Thomas's after the apostle and not after Thomas à Becket of Henry II's time. To a very small extent the

hospital was self-supporting and patients were made, where possible, to pay for "apothecary's stuff". The parish from which a pauper patient came was expected to contribute something like 11d. for his maintenance while in hospital. Women and children were set to remunerative work which was disposed of by the Matron for the benefit of the institution. The treatment of patients suffering from venereal diseases comprised a sound whipping before their discharge from hospital and church-going on Sundays was encouraged by the confiscation of delinquent's dinners. By 1692 the hospital had again fallen to a state of poverty because of the losses incurred by the destruction of properties in the great fires of 1666 and 1676, and the building itself was old, low and damp. Various gifts of money were made and an inscription on one of the walls read:—

> " This building on the North side of this court, containing three wards, was erected at the charge of Thomas Guy, Esq., citizen and stationer of London, a worthy governor and bountiful benefactor of this hospital, 1707".



Guy's Hospital, 1875, showing the glass roof of the old operating theatre.

Thomas Guy was a governor of St. Thomas's Hospital and his original intention was to provide accommodation for sick people who could not be received by St. Thomas's or who were discharged from it as incurable. To that end he took a 999-year lease of land belonging to the hospital and here in 1722 work began on the addition, but while it was proceeding Guy decided on a separate hospital for 400 patients. Just as the fabric was completed he died, aged 80, on December 27th, 1724. He lies in the Chapel.

Thomas Guy was the eldest son of a coalmonger and was born in Horsleydown in 1644 or 1645. At the age of 15 he became an apprentice to a bookseller, where he was to remain for eight years, and at the end of that time was admitted a Freeman of the Stationers' Company. Guy made his start in business by binding and selling Dutch printed

Bibles, the printing of the Scriptures here being a University monopoly, and eventually he entered into a contract with the University of Oxford for their privilege to print Bibles. The association was so successful that Guy gave his shop the sign of the Oxford Arms. He sat in Parliament for Tamworth, his mother's birthplace, and bought South Sea stock at £100, selling it at anything from £300—£600. He did it all to good purpose for he left £200,000 for the endowment of his hospital besides large sums to other charities. There are, however, many stories about his so-called miserliness.

"One of the famous miser stories tells of a visit to Guy after nightfall by a certain 'vulture', Hopkins, seeking advice on the practice of economy. On learning his errand, Guy is said to have put out the farthing candle, declaring that such a matter could be discussed just as well without wasting the light! Alexander Pope names Hopkins twice in his "Epistles in Imitation of Horace", and one of these references is sufficiently appropriate to be quoted:—

"*When Hopkins dies, a thousand lights attend*
The wretch who, living, spared a candle's end."

If Guy was really of a similar character it seems strange that he should have escaped the pillory of that vindictive little poet." By the end of 1721 the site for the new hospital had been cleared and in the following spring the foundations were laid for the "persons labouring under any distempers, infirmities or disorders thought capable of relief by physic or surgery; but who, by reason of the small hopes of their cure or the length of time which for that purpose may be required or thought necessary are, or may be adjudged or called incurables." Guy, however, died just after the hospital had been completed and one week before the first 60 patients were admitted.

There was, however, yet another hospital in the district: this was The Locke Hospital for Lepers. In 1421 it was dedicated to the Virgin and St. Leonard, the saint of captives without the bars, and it originally belonged to the monks of Bermondsey. When leprosy was no longer common (by the way, this was probably the hospital to which Henry IV came in 1412 "to be cured of the leprosie") it was reserved for other "loathesome diseases". Henry IV died only one year later. The monks were, in the main, the doctors of their day and the people came to them as either in or out-patients, for relief or cure. If the skill of the physician was lacking, faith, imagination and the influence of the shrine or healing water were invoked but one does not know whether much good was ever done.

The Marshalsea and King's Bench prisons existed principally for the detention of insolvent debtors and until comparatively late in the last century it was still possible to imprison for debt. One inmate of the Marshalsea was in no doubt about its qualities. "As to health," he says, "it hath more diseases predominant in it than the pest-house in the plague time, the place stinks more than the Lord Mayor's Dogge-House or Paris Gardens in August." As to temperance, "it is nothing els but a great ale house, for every chamber is nothing els but a continuall drinking room, it is a full sea when three men are forced to lie thrusting in one bed." In 1750 two judges, the Lord Mayor, one

Alderman and several others died of a fever which had been brought into the court by prisoners and so the interned did in some way avenge themselves. In a little book published in 1718 and called "Hell in Epitome" or a description of the Marshalsea prison, one finds this gratifying line: "if the prisoner has no food of his own, he is at liberty to chew the bars". Then there was the King's Bench Litany:—

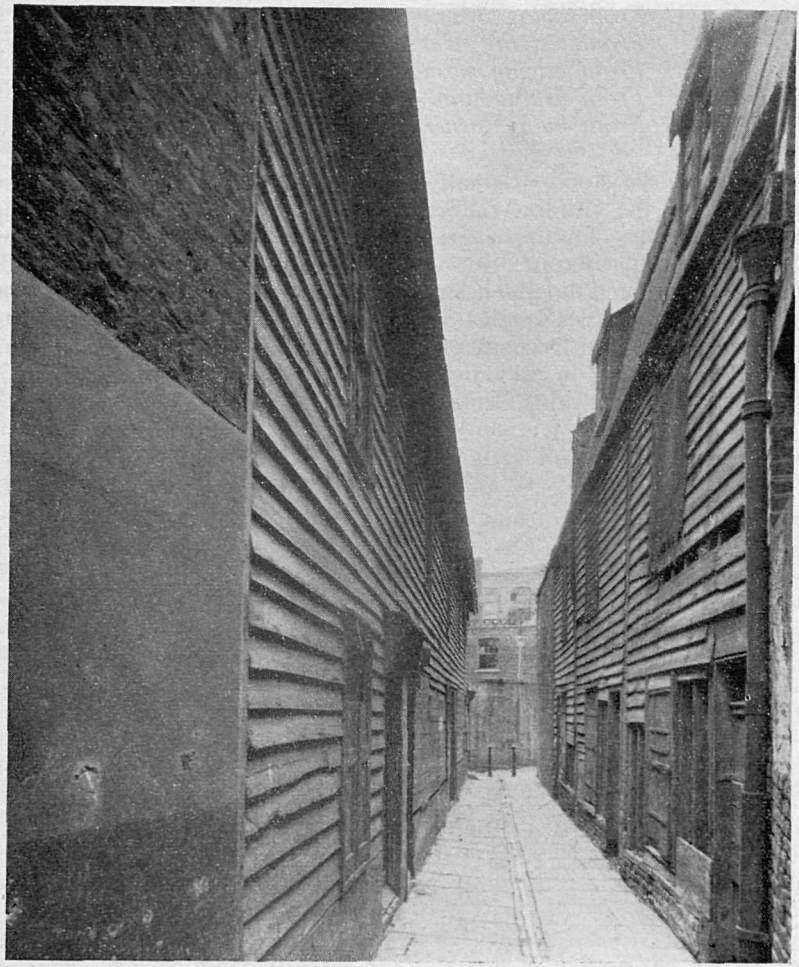
From creditors when cruel grown,
From bailiffs and their crafty scent,
From dining often with the Duke,
From paying homage at the pump,
From being overcome by drink,
From lodging near a boghouse stink,
From having stomachs and no chink,
From asking food to be denied,
From being turned to the common side—
Libera nos Domine.

Marshalsea stood originally in the High Street and escaped the attention of the Gordon rioters in 1780 who tried to ransack the house of Henry Thrale, a friend of Dr. Johnson's, because they thought he was a Papist. It was extended to embrace the old King's Bench prison, and finally it finished up as the debtor's prison—the Marshalsea of Little Dorrit—on the site of the Whyte Lyon Prison. It was abolished on December 31st, 1849. Beside Angel Place, where it originally stood in the High Street, there now stands the Metropolitan Police Recruiting Centre.

Blackman Street, later renamed Borough High Street, 1827

Not far from the High Street, to the East of St. Thomas's Street, was a place where temporary shelters were erected for some of the thousands of Protestant refugees who were driven from their own country on the borders of the Rhine in 1708. Subscriptions for their

relief were organised to which Thomas Guy gave £100, "and at the same time the like sum to St. Thomas's Hospital on account of the admission of a great many of those among them who were sick and disabled". Much of this land which had been used as a burial ground for St. Thomas's Hospital, was acquired about 1816 by Guy's for the use as a botanical garden, on condition that St. Thomas's might bury their dead in the graveyard in Snow's Fields. William Rendle, a surgeon, wrote of that time that "Dr. Addison used to take us in a semi-serious, amateur sort of walk to the Botanic Gardens, by the Ship and Shovel, East of Guy's."



Wagstaff Buildings, 1934

However, Southwark's population was very poor, not healthy; and only too grateful to accept the sanctuary of the hospital and sometimes even the hell on earth of a prison. In 1824, in Bird Cage Alley, it was common to find houses with 18 families living in them. King

Street and Vine Yard were described by the official surveyor of that time in this manner: "This place I call Sodom. The inhabitants are awfully ignorant and scenes exhibited here are truly revolting. I asked one if she had a Bible? She said, yes, and produce a tract". The photograph shows Wagstaff Buildings in Guildford Street in 1934; 110 years before then it was described as "a scene of wretchedness and misery, not more than one in ten of the children are able to read!" Further on, along the river bank, is Rotherhithe, a district of great poverty in the 19th century. The inhabitants were mostly waterside labourers, many of them Irish and all extremely ignorant. They were nicely described as not "reading men".

When the railway came, and the first in London was the Greenwich Line of 1836, the inns of the Borough High Street became railway goods depots. This lasted until 1922, when competition ended and the railway activities of most of the former inn yards lapsed. It was in Southwark also that London saw its first tube railway, or at any rate the greater part of it, in the old City and Stockwell line, which was opened on November 4th, 1890. Before then, however, Guy's had seen an interesting inmate. About 1870 a team of Australian aboriginal cricketers came over to England and made their headquarters here. Change of climate and drink did not altogether suit their health, and one of them, nicknamed "King Cole", died of consumption in Guy's. The reporter adds that "these aboriginies must not be confounded with the splendid teams which visit us nowadays". Take-in at Guy's was already established in the 18th century. "When the accident is brought in, the surgeon whose week it is receives notice and, according to the nature of such accident, he either goes immediately over, or trusts the management of it to the dresser who is in waiting there."

By the end of the 19th century, living conditions were dreadful and the social environment for most of the workers was intolerable. The Clergy began evening schools and clubs for boys and girls, medical students from Guy's would go out among the worst courts and were tolerated because they had come to doctor the sick and not to ask disagreeable questions about the children's school. One or two polytechnics had been opened for the "lads", and college settlements had been set up. Since that time much has been done, particularly in the last 30 years, and there is now much good feeling between the people of the Borough and Guy's. Old slums are still being cleared away and it is frightening to think back that only a few short years ago the cluttered houses hid from sight the motley flotsam of a backward society. In 1847, John Lever, a physician at Guy's, finished his address to the new students with these words:—

"May a wayfaring man's footsteps be arrested as he approaches the tablet which patient, friend and relative may have combined to erect in your remembrance, and whereon he finds tritely but truthfully inscribed your character—

" NON SIBI; SED TOTI."

T. C. DAVIS.

CRITICISM

by SYLVIA TREADGOLD

Art Exhibition - 1963

This year's exhibition is as large and varied as ever and shows some extremely interesting things. But before commenting on them I must disclose something of my prejudices. More than a dozen years of teaching and doing commercial art makes me cynical about gimmicks, and knowledgeable about the tricks of the trade. I do not rate skill in drawing very high—this talent is very common—and sometimes misleads such people into thinking they are artists. The USE of that skill is everything, and because the message (for lack of a better word) in a painting is generally of extreme subtlety, it helps if you can draw well and therefore express it more easily. This does not elevate "being able to draw well" above a useful tool.

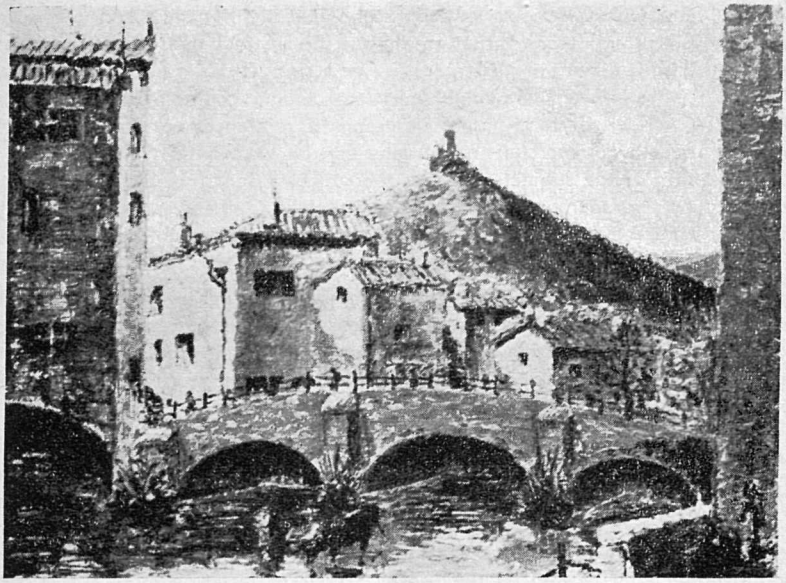
I like a picture to look pleasant on a wall—what is it painted for otherwise? It must widen my vision and make me think *"I hadn't realised. . . ."* Being a woman I hardly ever like a nude (only Renoir can make me want one) but I admire above all originality of thought, a brave attempt, a composed picture—not a happy accident. So to my comments.

Three artists immediately stand out this year as they have done before—Neil A. Watson, Stewart Cameron and Henriette Pels. All are well out of the amateur class. Though not normally addicted to pottery, I am captivated by Miss Pel's vases. Subtle pinks and greys, intriguing textures and a delicacy of form make them look more like a collection on loan from a museum than the product of a hobby.

Neil Watson shows some very elegant and delightful pen and wash drawings of London so clean, so well perceived one wonders if he got heartily sick of his facility and so plunged into oils. If so the best of luck but the results so far do not compare with his other work.

Greenwich by Neil Watson

Cameron delights me with his ink line drawings—a beautiful, lively line and he knows exactly what he wants it to do and knows to a hair's breadth when to stop. I like his atmospheric American drawings and especially his page of sketches of apes. These brilliantly show the artist's pleasure and



Champiex-Auvergne by R. J. Birts

exploration of a new subject—not one line seems put for any effect except to express a somewhat ridiculous animal.

Excitement and pleasure is vivid, too, in a pastel by P. B. Morris, of cheeses. Glowing colours of gold and red and olive green give it a richness seldom seen in a pastel. Still life is something of a snare—it makes an excellent study but is extremely difficult to make into a picture that anyone actually wants. This pastel succeeds hand-over-fist but R. J. Birt's oil, of beer bottles and a dirty ashtray does not. Why ever choose such a frightfully difficult subject? If ever there was a subject where colour photography can beat you hands down (look at some posters advertising beer) this is it. But it might have been fascinating if it had been lit by one candle and with a cat washing in the foreground, I'm sure it would have been more fun to paint and if you're not painting for fun why ever bother?

I think C. H. Kinder gets quite a lot of pleasure out of painting his sailing pictures. The oil painting of a dinghy race in a flat calm, I like enormously. There is atmosphere and great observation and it can be looked at for a long time.

In contrast to the above, an almost complete lack of technique has yet made the charming "Tapestry for Sally-Ann", by Sally Gordon. It is a gay montage connected with dashes of oil colour, very gay and fresh and I hope a delight to Sally-Ann. "Hurstwood Park" is also a painting that I am sure gave great pleasure to its creator and will give him pleasure to own it, in spite of the fact that it is the sort of painting that would make any art school master have apoplexy.

Of the remaining oils, J. C. Robertson has a most interesting townscape with subtle lighting, that you can readily move into, while C. S. Good has a

cheerful and well-composed harbour scene, excellently composed. The two anonymous abstracts I find rather empty but the abstract treatment of fireworks in R. F. Wilson's "Fifth of November" is most successful. I hope it isn't just a copy, but lying amongst drawings which are obvious copies from photographs, makes one wonder. Certainly use photographs as references but the complicated lighting used in commercial photography can be exceedingly misleading as to the true form of the subject. It can, though, be fascinating if abstracted into a linocut or a scraperboard drawing. It is better to choose some medium far removed from the smooth tones of the print and therefore not such a tell-tale as to the source of inspiration!

A most interesting sample of the hassocks being embroidered for the chapel are on display. That for Bright ward with its group of candles, and that depicting Old Guy's House with our motto round the sides are wonderfully successful as designs in that most difficult of mediums, cross-stitch (see the trouble St. Christopher has been on his cushion).

Lastly, there is a poster display, N. A. Watson winning the 1st prize and C. S. Davies the prize for the best, quickly done. Neil Watson certainly deserves his with a design of pure colour and shapes that make one wish he had shown some purely abstract paintings. The other posters show some attractive and amusing ideas—that for the Boat Club Hop is most ingenious and striking, only faulted by the use of a style of lettering more suitable for Morris dancers than jive! All these posters have a zest about them that is lacking in some of the neighbouring paintings and it is disappointing not to see more experimental work shown. What of oilcolour crayons, so much faster to use for sketching and with great brilliance and translucency when used with a wash of turpentine? What of watercolour pencils that dissolve into a wash yet retain the quality of the drawing? What of pastels used sharply on their sides as chunks of colour or smudged delicately over white paper? All these are infinitely easier to use than watercolour and considerably cheaper than oils.

If some of my remarks have been severe it is because the paintings are WORTH criticising because of the underlying skill and of this Guy's seems to have a splendid abundance.

(*Photographs by members of Guy's Hospital Photographic Society*).

CORRESPONDENCE

Guy's Hospital Theatre Club

SIR, " For what is a man profited if he gain the whole world—and lose his own soul?"

This Biblical quote underlines the theme of the Theatre Club's December production, " The Strong are Lonely", by Fritz Hochwaelder. It is a story of power and wealth, both spiritual and worldly, and of the inner conflicts of men to achieve them.

The Club will present the play in the Physiology Theatre from Monday, December 2nd to Friday, December 6th, all performances commencing at 7.30 p.m.

Tickets may be obtained shortly from outside Smith's bookstall or by letter from the Secretary of the Club.

Yours, etc.,

Theatre Club,
Guy's Hospital.

NICOLAS H. FLOWER,
Hon. Secretary.

Laboratory Facilities for Clinical Students

SIR, A year ago clinical students in Guy's were encouraged to hear that a committee had been appointed to improve student laboratory facilities in New Guy's House and in Hunt's House. Student opinion was sounded as to the exact nature of the requirements. Subsequently a rumour went round that two new laboratories for students were under construction in New Guy's House.

A year has now passed. It it still not possible to do a routine blood count in New Guy's House, although a few microscopes without the necessary mechanical stages have appeared. Haemoglobinometers in each ward are without accessory apparatus, and many are locked away so securely that getting at them is more trouble than it is worth.

In view of the comments in Passim of your last issue, we feel that it may be of general interest to air these facts. We hope that ways may be found of remedying these deficiencies in the near future.

Yours, etc.,

H. D. TUNSTALL PEDOE.
CHRISTINA J. S. LAWRIE
C. P. W. WARREN.
ANTHONY DAVIS.
B. G. R. NEVILLE.
JULIET PIKE.
D. K. MASTERS.
CHRISTOPHER J. PADFELD.

Pupils' Physical Society,
Guy's Hospital.

We publish below a reply from Professor W. J. H. Butterfield, concerning these problems.—EDITORS.

SIR, I am very grateful to the committee of the Pupils' Physical Society for their courtesy in showing me their letter. As convenor of the School Council sub-committee responsible for discussing student laboratories, I am partly responsible and partly to blame for the delay between the reports last winter and the achievement of the laboratory Utopia we would all like to see. However, I hope your readers will appreciate that this is rather more difficult to organise than producing complaints. And there have been some improvements in the last year.

The major new situation in this matter is New Guy's House, and it is indeed unfortunate that this was designed without specific student laboratory space. However, this hospital did not achieve its eminence by crying over spilt milk, but rather by zest and ingenuity. Since the major difficulties in the new surgical block were pointed out last year, Russian microscopes have been made available by the Superintendent on the wards on the 3rd, 5th, 6th, 8th and 9th floors and also in the laboratory available to students and housemen on the 4th floor (which incidentally was recently left in a very untidy state by someone!).

There have been complaints that these microscopes do not have moving stages suitable for emergency white blood counts, but it should be possible to do these with the stages provided at present. The moving stages supplied are a Russian style intelligence test, and it is not difficult to move the counting chamber horizontally or vertically by turning the thumb-screw either in opposite or similar directions. But if these really are unsatisfatcory, others must be added.

I do not know who locked up the haemoglobinometers: they should be "readily accessible at all times of the day and night"—in the clinical laboratory in Hunt's House, as laid down in the prospectus of Guy's Hospital. There have also been other complaints made to me that counting fluids are not available at week-ends, nor are there means for cleaning blood counting and haemoglobin pipettes, everywhere. Here surely, take-in clerks and dressers might learn from American students who have overcome these difficulties by emulating the Wise Virgins—by carrying a set of suitable small bottles, stuck together with adhesive tape, containing stains and cleaning fluids, ammonia, distilled water and acetone. This makes them independent of the vagaries of supplies and they use their

lungs as pumps to clean and dry haematological pipettes. Again, I have been told that much time is wasted by students carrying specimens through the tunnel to the clinical pathology department: but cannot some pioneer " gauleiter " organise a system to overcome this.

What I am trying to say is that students can and must be encouraged to do things for themselves: the staff must help them when they get stuck. Nevertheless, the committee of the Physical Society has done a useful job in airing the difficulties they have met in New Guy's House because they will stimulate activity about these and many other general problems about students' responsibilities for laboratory tests and the facilities provided to carry them out accurately and efficiently.

Obviously laboratory supervision and equipment and the need for telephones in student laboratories will all have to be reviewed in the near future. Dr. MacLean has also suggested that there should be a printed form for student laboratory investigations. There must be changes, but in recommending them, a nice balance must be struck between various needs, educational and practical. The School Council will have to be assured that the changes will not make students over-dependent on complex apparatus: it is not always available (but then, neither are carbon monoxide or Fehling's solution). Obviously, any changes must be properly integrated with pre-clinical teaching (e.g. biochemistry) and instruction in clinical pathology and bacteriology. From the practical point of view the consultants at the Medical Committee will want to ensure that all changes are in harmony with their ideas and clinical requirements.

There is much to be done. I hope that it will not take too long to reach the primary decisions about the tests students should be responsible for as a matter of routine and the methods to be used. Meanwhile, perhaps the committee of the Pupils' Physical Society will record any other complaints and pass them on for consideration.

Yours, etc.,

W. J. H. BUTTERFIELD.

Department of Medicine,
Guy's Hospital.

Lord Nuffield

SIR, May I add a small personal note to the memories of our late Treasurer Viscount Nuffield.

In the mid-thirties when he became a Governor of the Hospital, I had considerable contact with him, for Lord Nuffield was always interested in nursing matters.

About that time I acquired a car—a Morris Cowley 12 h.p. When I was a young girl living in the Superintendent's house, my uncle, Cooper Perry, bought a Stanly steam car and I became its driver. The easier traffic of those far-away days were no difficulty to me, but later I found that gear changing with an internal combustion engine, did not come easily. In a steam car, when you wanted more power, you just opened the throttle and used more steam.

His Lordship was interested in the first motor car of my own, and one day, when discussing gears, he clapped me on the back and said: " My dear girl, if everybody changed gear when he should change gear, I should not sell so many cars."

This memory remains with me, together with my abiding respect for that warm-hearted, kindly man.

Yours, etc.,

EMILY E. P. MACMANUS.

Terry Lodge,
Terrybawn, Bofeenaun,
Ballina, Co. Mayo.

SPORT

RUGBY FOOTBALL

All the lessons learnt in the recent week of hard fixtures were put to profitable use in the last two games. Wins by 6—0 against Old Blues and 8—0 against Old Haberdashers demonstrated the ability to mould the game defensively and the side showed energy and covering skills, while in attack, only damp pitches prevented open play from proving more successful.

Against Old Blues, two penalties by Edgar may not seem excessive, but the impression given was that the game was always under safe control.

Against Old Haberdashers the forwards showed a return to previous dominance and dictating the run of play. On a very muddy pitch, which hampered open play, MacGregor and Myall kicked superbly, and with Edgar in good form, the general performance was very promising. Tries were scored by Allen and Wright, following some very comprehensive outside play. But it was the forwards who impressed greatly, and their combined strength and stamina augers well for the testing muddy pitches ahead.

BOAT CLUB

This column erroneously stated recently that the Cross-Country Club were the only one able to brave last winter—in fact, the Boat Club in a most successful year, rowed throughout the appalling weather. This enabled the Club to burst upon the Henley scene—the mecca for all oarsmen.

This year's captain, Colin Soutar, is faced with a very difficult task, as seven oarsmen and the coxswain from last year's 1st VIII are not available for the greater part of the season. Trials have been conducted and, although the club lacks experienced oarsmen, it is hoped to build a successful VIII from enthusiasm and fitness.

Training has already begun in earnest with three outings on the river at Chiswick and one circuit-training session in the Gymnasium every week. The Club is fortunate to have the services of D. J. F. Gurney again as chief coach.

Rowing involves travelling—frequently—to Chiswick, and much hard work. This year's crews have the imposing records of last year to better, and no doubt the customary enthusiasm will make this possible.

TABLE TENNIS

Passers-by en route to the Students' Bar may be aware that table tennis tables exist—certainly, ribald comments coming through the doorway advertise the presence of such watchers. Should enquiries be made, the presence of an active club in an expanding University sport would be discovered.

Captain Alan Brook would welcome the active participation of some of these onlookers, or even serious critical appraisal from them. For the Club now enters two teams in the University League, which this year has a record entry of over 70 teams. In addition, one team is in the University knock-out competition—the Caribbean Cup—and two in the Inter-Hospitals Cup, which takes place later in the season. The team has successfully come through the first round of the Caribbean Cup, and has met several other clubs, including New College, Oxford, and Sir John Cass College.

Brook is in the short list from which the University second team is to be chosen. He would welcome new players to perform on an average, once a week, perhaps some potential talent shyly regards the activities through the window instead of stepping inside.

Table tennis is a rapidly developing sport that perhaps deserves more support. Much time and enthusiasm is devoted by regular followers, who achieve a high standard in the University—yet a blue, or even a half-blue, has not been awarded to honour the Club and recognise its status. Perhaps, in 1963-1964, success will arrive and some acknowledgment will follow.

RUGBY

GUY'S v. OLD BLUES

At H.O.P. 2nd November, 1963

Result: won 6—0

A heavy shower of rain an hour before the kick-off determined the pattern of the game against the Old Blues. The ground was very slippery, and within minutes the ball became practically impossible to handle. It was therefore hardly surprising that the game developed into a kicking duel between the opposite fly-halves and full-backs. In such conditions Myall, at full-back, came out of the game most creditably, kicking and fielding extremely well.

The trend of the game was established in the first few minutes, with play almost entirely confined to the forwards. In fact, throughout the game the Old Blues fly-half did not once give the ball to his centres, but relied entirely on diagonal kicks to the wing. On the other hand, Guy's did try to use their threequarters, and a good movement along the line, with Baker in support, gained ground but failed through lack of further support. Soon after this Edgar was well wide with a penalty attempt from long range. The rest of the first half consisted of rapid switches from one end of the pitch to the other, usually accomplished by forward rushes and fly-kicks ahead.

The only constructive movements to cheer the small band of loyal supporters and fiancées came from Guy's, and a break by Allen, who passed to Biggs, and than back to Allen, took the Hospital to within ten yards of the Old Boys' line. The only score before half-time, however, came from a very good penalty kick by Edgar from 35 yards, and 10 yards in from touch.

Soon after half-time continuous heavy rain made the conditions even worse, and the game necessarily developed into a forward battle. Lewis, in his first game for the Hospital 1st XV, won plenty of the ball from the set scrums with good support from Davies and Fisher. In all phases of the forward battle, Guy's were superior, being fitter, faster and more decisive than their opponents. The back-row were particularly effective, with Baker apparently revelling in the wet conditions. It was hardly surprising that the only other score should come from a magnificent penalty goal, kicked by Edgar from the touchline and 35 yards out.

Indeed it was rather ironical that the Old Blues, whose sole idea of attack was to kick the ball as far upfield as possible, should be beaten by two penalty goals. In reasonable conditions the Guy's outsides, who appeared yards faster than their opposite numbers, must have scored several tries, and the final score of 6—0 did not do true justice to the Hospital's all-round superiority.

EDDIE PRICE

Team: R. W. T. Myall; D. A. Biggs, A. Allen, C. J Wright, R. Kerner; J. A. Edgar, H. W. MacGregor; J. E. Davies. C. Lewis, A. R. Fisher, P. K. Peace, A. J. Kingdom, R. Brown, D. Hendrick. I. A. Baker (Capt.).

ASSOCIATION FOOTBALL

GUY'S v. READING UNIVERSITY

At H.O.P. 23rd October, 1963.

Result: won 4—1

Reading University, who were finalists in the British Universities Championships last season, fielded their full side. A week ago the "United Hospitals' " side, which included eight players from Guy's, drew 2—2 with the University at Reading. Play began with Guy's containing their opponents and within 20 minutes they had a 3—0 goal lead. Cochrane took advantage of the Reading defence lying right up, at a goal kick, and put a long ball over the centre-half's head, for Cutler to run on to. Cutler out ran the defence and from the edge of the penalty area scored with a fine shot to the top corner of the goal. A Reading defender then tried to pass back to his goalkeeper and pushed the ball wide into the corner of the net. Soon after, Atkins took a corner kick and placed the ball high and close to the goal. The Reading goalkeeper failed to hold the ball and Elias's quick shot gave the defence no chance to cover. With the score at 3—0 Reading fought back and Guy's were forced to defend. Reading quickly scored, and Parry made a good save when he put a hard shot over the bar.

The second half saw Guy's 3—1 in the lead and they were not to score again until near the end. Reading held the initiative in midfield and Guy's defended hard with Davies at centre-half and Parry in goal frustrating many attacks. When Guy's did break away however, they looked likely to score. Atkins, on the left wing, beat his back and cut into the penalty area along the goal line. The back, in trying to take the ball from behind, brought him down. Davies very coolly scored from the penalty spot. The game had followed the same pattern as the previous match against the London Hospital, when a 3—0 lead was quickly built up, after which Guy's had to fight hard to win. A hard entertaining game with Guy's the better team, but perhaps not three goals better.

NIGEL TRAYFOOT.

Guy's: Parry; Sheridan, Cochrane; P. Davies, W. W. Davies, Palmer; Shepherd, Elias, Cutler, Powell-Jackson, Atkins.

WATER POLO

1st v. BARTS I.

29th October, 1963

Result: won 8—2

Team: Barnes, Bartlett, Holland, Jones, Valentine.

Scorers: Valentine 4, Barnes 2, Jones 2.

Guy's went into an early lead due to superior swimming and positioning. The fact that our goal remained intact after several attacks gave the team added confidence and allowed much freer movement and interchanging of team positions. Barts never gave up but were not able to cope with a breaking team.

This result, and the fact that Mary's defeated London, puts Guy's top of the league by one point. This is unheard of for the last four years and support would be most welcome, and we hope rewarded.

2nd v. LONDON II.

1st November, 1963

Result: won 6—1

Team: Wood (G), Holland, McGlynn, Johnson, Ashford.

Scorers: Holland 3, Ashford 2, McGlynn 1.

HOSPITAL INFORMATION

HOSPITAL APPOINTMENTS

GUY'S HOSPITAL

Applications are invited for the post of **Senior Registrar in the E.N.T. Department** with appointment from 1st January, 1964, until 30th September, 1964. Application forms are obtainable from and should be returned to, the Superintendent, Guy's Hospital, S.E.1., not later than **23rd November, 1963.**

GUY'S HOSPITAL

Applications are invited for the appointment of **Registrar in the Dental Casualty Department** with attendance on 6 sessions per week and with duties commencing as soon as possible. Forms of application are obtainable from, and should be lodged with, the Superintendent, Guy's Hospital, S.E.1., not later than **Friday, 6th December, 1963.**

GUY'S HOSPITAL

Applications are invited for the appointment of **Dental Officer to Treat In-Patients** (General Dental Practitioner grading) with attendance on 6 sessions per week and with duties commencing as soon as possible. Forms of application are obtainable from, and should be lodged with, the Superintendent, Guy's Hospital, London, S.E.1., not later than **Friday, 6th December, 1963.**

GUY'S-MAUDSLEY NEUROSURGICAL UNIT

Applications are invited for the post of **Registrar** (Middle grade) for one year commencing in December, 1963. The Unit, which is housed in the Maudsley Hospital, serves both Guy's Hospital and the Bethlem Royal and the Maudsley Hospitals. Applications should be made by 23rd November, 1963, to L. H. W. Paine, House Governor and Secretary, Maudsley Hospital, Denmark Hill, London, S.E.5.

MEDICAL FIRMS

New Arrangements

There will be five Medical Firms with effect from the 12th November, 1963. These will be comprised as follows:

Dr. Mann, Dr. Scott and Dr. Bishop.
Dr. Hardwick, Dr. Trounce and Dr. Deuchar.
Dr. Baker, Dr. Houston and Dr. Grimble.
Dr. Kauntze and Dr. Joiner.
Prof. Butterfield and Dr. MacLean.

TAKE-IN

The medical firms will work a one day take-in from 12th November—the day to remain fixed, and the duty rota will be as follows:
Monday—Dr. Mann and Dr. Scott.
Tuesday—Dr. Hardwick and Dr. Trounce.
Wednesday—Prof. Butterfield and Dr. MacLean.
Thursday—Dr. Kauntze and Dr. Joiner.
Friday—Dr. Baker and Dr. Houston.
Weekend (Saturday 10.00 a.m. to Monday 10.00 a.m.) Firms will rotate as above.

Each firm should try to have two male and two female beds available on the morning of its take-in, and whenever possible a firm should take-in to its own beds.

Unless special arrangements are made, cases taken into another firm's beds will revert to the care of that firm at the end of the take-in day or weekend, i.e. at 10.00 a.m.

The Hospital bed state will be kept up to date by the senior nursing staff in the Casualty Department after 5.00 p.m. The Deputy Admitting Officer will be informed of any admission up to 11.00 p.m. After this time, he should telephone if he requires the latest information.

Students will remain on duty for seven days as at present and will belong to the firm on duty for the weekend.

OUT-PATIENTS

Each firm will have one morning out-patients weekly:

Monday—Professor Butterfield.
Tuesday—Dr. Trounce.
Wednesday—Dr. MacLean.
Thursday—Dr. Joiner.
Friday—Dr. Houston.
Saturday—Dr. Scott.

The arrangements commence on the 12th November. Afternoon duties are not affected.

SURGICAL FIRMS

New Arrangements

It has been decided to change the take-in arrangements so that each medical and surgical firm takes-in for one day each week, the day to remain fixed, and in addition to take-in at the week-end in rotation.

The new arrangements will come into force as for surgical firms on Friday, November 1st, and the duty rota will be as follows:—

Monday—Mr. Eckhoff/Mr. Glover.
Tuesday—Mr. Wass/Mr. Brain.
Wednesday—Prof. Atkins/Mr. Lawrie
Thursday—Mr. Blackburn/Mr. Beard.
Week-end (Friday 10.00 a.m. to Monday 10.00 a.m.).
Prof. Atkins/Mr. Lawrie.
Mr. Wass/Mr. Brain.
Mr. Blackburn/Mr. Beard.
Mr. Eckhoff/Mr. Glover.

The change-over of firms will take place at 10.00 a.m.

Special departments, including Obstetrics, will take-in, as at present for a week at a time, commencing Tuesday, 10.00 a.m.

Students will remain on duty for seven days as at present and will belong to the firm on duty for the week-end.

PASS LIST

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Final L.D.S.

Part 1, Surgery

A. G. Ball
C. H. Blith
Gillian Brent
A. H. Brook
Helen C. Carr
T. R. C. Cheesman
P. A. Dunstan
C. M. Jones
C. R. T. Lachlan
T. K. Laing
P. G. McAndrew
R. C. Paterson
W. S. Reid
A. J. Smith
Sara V. Tate
J. G. Thomas
E. Tiller
J. E. Turner
M. S. W. Tyne
C. J. S. Wright

Part 2, Dental Surgery

N. A. L. Baker	R. D. Howell
J. L. Banfill	M. C. E. Hutchinson
R. L. Bartlett	R. P. Juniper
B. Bennall	Sarah A. Larkin
A. J. Bishop	S. J. Mackay
D. J. Boddy	J. C. L. Margerison
H. P. Briggs	D. O. Matthews
A. E. Buchanan	Linda M. Meyer
J. B. Burt	T. J. Mirams
P. H. Chadwick	M. D. Murray
J. G. Cook	C. W. Obara
Joanna M. Dumbrell	D. J. Purdell-Lewis
G. A. N. Edgar	C. R. G. Quick
B. D. Glynn	Kathryn J. Ramsker
J. J. Greenwood	P. G. Sullivan
D. H. Griffiths	Jennifer M. Sutcliffe
J. D. Gullan-Whur	C. D. C. Tomlins
G. I. Hearn	J. H. Topham
Beryl E. Hearnden	Elizabeth A. Ward
M. R. G. Holmes	D. W. Waters

ROYAL COLLEGE OF SURGEONS OF ENGLAND

F.D.S.

G. Maggs H. K. Kemp P. M. O'Driscoll

F.F.A.

G. F. Pierce

UNIVERSITY OF LONDON

M.D.

D. B. Amos W. R. Lee

UNIVERSITY OF OXFORD

2nd B.M. Examination. Long Vacation, 1963
General Pathology and Bacteriology

M. J. Elliott

Special and Clinical Pathology

F. D. Higgs D. A. McCay G. W. Stevenson

PAPERS BY GUY'S MEN

Blaikley, J. B. Treatment of carcinoma of the cervix. *Proc. R. Soc. Med.* 1963, **56**, 876.

Calne, R. Y. Biological factors in tissue transplantation. *Proc. R. Soc. Med.* 1963, **56**, 935.

Illis, L. Changes in spinal cord synapses and a possible explanation for spinal shock. *Exp. Neurol.* 1963, **8**, 238.

Lane, R. E. and another. Follow-up study of lead workers. *Brit. J. Indust. Med.* 1963, **20**, 313.

Leeming, J. A. L. Tinea nigra. *Brit. J. Derm.* 1963, **75**, 392.

Lillicrap, D. A. Rheumatoid arthritis and pemphigoid. *Proc. R. Soc. Med.* 1963, **56**, 921.

Moynahan, E. J. Epidermolysis bullosa affecting the buccal and pharyngeal mucosae. *Proc. R. Soc. Med.* 1963, **56**, 885.

Ross, D. and others. Resistant ventricular tachycardia a year after surgical correction of Fallot's tetralogy treated by external electrical counter shock. *Lancet* 1936, ii, 708.

Shephard, R. J. Mechanical characteristics of the human airway in relation to the use of the interrupter valve. *Clin. Sci.*, 1963, **25**, 263.

Swift, P. N. Cystic fibrosis of the pancreas and biliary cirrhosis. *Proc. R. Soc. Med.* 1963, **56**, 923.

Swift, P. N. and others. Relation of the staphylococcus and antihaemolysin titre to infection in the newborn. *Arch. Dis. Childh.*, 1963, **38**, 500.

Wells, G. C. and another. Myxoma, myxosarcoma. *Proc. R. Soc. Med.*, 1963, **56**, 903.

Wells, R. S. and others. Erythrasma in adolescence. *Brit. J. Derm.*, 1963. **75**, 401.

PERSONAL

Special rates for Guy's Staff, Students, Nurses and Subscribers to the Gazette. 5 words 10s. 6d. 15 words 21s. 0d. Box Numbers 1s. extra.

Ordinary rates 15s. 0d. 5 words. Box Numbers 1s. extra

RECEPTIONIST Part-time, required for partnership of three doctors, New Cross. For details phone TID 5443.

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CHANGES OF ADDRESS

Dr. and Mrs. C. Bishop, The Glen, Playford Road, Little Bealings, Woodbridge, Suffolk. Tel: Kesgrave 530.

Dr. J. H. Chitty, c/o P.O. Box 163, Umtata, C.P., S. Africa.

W. H. Dowell, T.D., M.R.C.S., L.R.C.P., The Bungalow, Whitwell Hall, Reepham, Norfolk. Tel: NOR. 66X.

F. L. H. Fox, L.D.S., 27A, Grange Road, Sutton, Surrey.

Dr. T. I. Francis, c/o Dept. of Medicine, University College Hospital, Ibadan, Nigeria.

Dr. and Mrs. William R. Hain, Camborne-Redruth Hospital, Redruth, Cornwall.

Dr. A. P. Hopkins, Chez Mme. Carrie, 8, rue de Belloy, Paris 16 ieme, France.

A. J. D. Lewis, Esq., The Chestnuts, 23, Carshalton Road, Sutton, Surrey.

Dr. G. L. S. Rankin, 42, Trinity Street, S.E.1.

Dr. F. Norman Rigby, 2978, Pasture Crescent, Port Coquitlam, British Columbia, Canada.

Dr. W. K. Targett, 12, Birch Close, Boundstone Road, Farnham, Surrey.

A. Vejjajiva, M.R.C.P., 32, Marondale Avenue, Walkerdene, Newcastle-upon-Tyne, 6.

BIRTHS

HUGHES.—To Mavis (née Jeremiah, S.R.N.), and Keith Hughes, a daughter, Nicola Clare, on 31st October, at Guy's.

LEOPARD.—To Sylvia (née Tee) and Peter Leopard, a daughter, Claire Angela, on Saturday, 28th September, 1963.

MOORE.—To Elizabeth (née Forstner) and Brian Moore, a daughter, on July 2nd at Guy's Hospital

GUY'S HOSPITAL GAZETTE

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Editors *W. G. Reeves*
T. C. Davis

Sports Correspondent *E. Tiller*

Guy's Hospital, London

PASSIM

With deep regret we record the death of the Rt. Hon. Lord Cunliffe on November 24th. Lord Cunliffe had been intimately associated with Guy's since 1932, first as a governor and later as Treasurer of the former Court of Governors. At the time of his death he was Chairman of the Board of Governors, a post which he had held since the inception of the National Health Service in 1948.

An obituary will appear in our next issue.

Across the Park

The infectious and unwritten atmosphere of a community conditions many of its participants' reactions. At Guy's there are many reasons for people being a part of its natural self, either as patients, nurses, students or staff. Inevitably many dividing lines exist between the different spheres of activity but liaison tends to occur due to the presence of common ideas both within and outside of Medicine. But as old customs wane, new ones are often late-starters.

Until quite recently, medical patients at least, were able to digress for a while from the strictly clinical atmosphere of the ward to a quiet lounge in Hunt's House. This has now been deftly converted into a small lecture room, there no longer being a place where ambulant patients may retire when not required in the ward. One particular teaching hospital has a congenial corner set apart, containing a small library where patients may browse or chat for a while in comfort. We hope that it will be possible for provision to be made for a similar amenity at Guy's. This would undoubtedly be appreciated by the many patients who are able to get about during the day.

Students and nurses on the other hand, each have their own variety of "common rooms", but a letter on page 610 of this issue suggests that the present facilities are not sufficient to permit adequate social exchange between these two groups. Naturally, it is difficult for organised cultural and social activities to coincide with everyone's free time, but some form of discussion would almost certainly assist in clarifying these problems which it appears the Students' Union is loth to do.

As a result of the extensive reconstruction of Guy's House, the colonnade—perhaps the focal point of the hospital in the past—has been rusticated for the time being. However, when both it and the new East wing are opened next year and the students and their Union installed with improved facilities, we hope that it will be possible to drag such occurrences as the Saturday night Hop and many society meetings out of their poorly attended doldrums and provide a means of meeting the social and cultural needs of all concerned.

And further, resurrecting the phoenix, may we make a plea for a large and efficient machine with which the daily shoal of mail, both internal and external, will be easily accessible and available to all without delay?

Chez Nous

There are many young girls working as Domestic Assistants in the various wards of Guy's who are here primarily to improve their English. They come from countries like Spain, France and Norway, and can all speak English to some extent when they arrive. Many of them come straight from school and when they return home will continue their studying at university level. The choice presented to a young foreigner is limited, either au-pair or hospital work, and few of those at Guy's regret their choice. They have pleasant living surroundings and the knowledge that they are their own boss when off duty is gratifying. Most of them have never done domestic work before, let alone in a hospital and the period of adjustment must be difficult for them to ride through easily. Their average stay in hospital is about six months but at the end they all too often leave having learned very little of the community spirit that exists in a hospital. Obviously there may be language difficulties but a friendly smile and some effort to tell and interest them in the many facets of student life would surely not be out of place. As it is now they spend their outward day in the midst of a hospital clamour but inwardly they may feel cut off and barely tolerated.

It is always that final existentialist moment which provokes the response: we were told that Dylan Thomas liked to climb mountains "not only because they are there but also because they are high". The ascent of a mountain in its own sake is rewarding. The cry of a baby, the first hesitant step after debilitating illness, the moment one learns one has passed or failed, the death of a friend : these are all finite moments in themselves in which we glory or fall. On Friday last, President Kennedy died at the hand of the assassin. A bleak moment, a grey day for all of us, for more than anything else he has brought a new sense of vigour, purpose and youthful exuberance to today's thinking and acting.

His tragic death brings to mind Louis Macneice's words about the passing of a poet and a friend:—

> *" And something, snowflake or dove, follows us down*
> *With something in its beak,*
> *A green sprig, a token,*
> *Of hope, of love?"*

The next issue of the *Gazette* will be the last before Christmas and we particularly welcome contributions towards it from any of our readers. Short stories, articles, cartoons, photographs and other features should be forwarded to the editors to arrive not later than Friday, 6th December.

GUY'S DIARY

DECEMBER

EXHIBITION. *Head Injuries.*

2nd	M.	1.00	Mr. CANN. Clinical Lecture.
3rd	T.	1.00	Dr. BISHOP. Clinical Lecture. *Family Planning.*
5th	Th.	1.00	Dr. TROUNCE. Clinical Lecture. *Acute Renal Failure.*
6th	F.	1.00	Dr. GRIMBLE. Clinical Lecture.
9th	M.	1.00	Mr. BATCHELOR. Clinical Lecture. *Congenital Dislocation of the Hip.*
10th	T.	1.00	Mr. R. O'NEIL. Dental Clinical Lecture. Dental Theatre. *Third Molars.*
12th	Th.	1.00	Dr. HIND. Clinical Lecture. *Assessment and Reduction of Anaesthetic Risks.*
13th	F.	1.00	Dr. FORMAN. Clinical Lecture. *The Reaction of the Skin to some Metals—Part I.*
16th	M.	1.00	Dr. FORMAN. Clinical Lecture. *The Reaction of the Skin to some Metals—Part II.*
16th	M.	1.00	Mr. D. M. MacDONALD. Dental Clinical Lecture. Dental Theatre. *The Role of the Oral Surgeon in Acromegaly.*

NOTICES

Guy's Science Club

The next meeting of the Science Club will be held in the Medical School Committee Room (New Pathology Block) on Wednesday, 11th December, at 4.45 p.m., when Dr. B. W. L. Brooksbank of the Biochemistry and Chemistry Department and Dr. W. Pryse-Phillips of Benenden Chest Hospital and formerly Department of Psychological Medicine will speak on:

"Steroids and Mental Illness".

The Chair will be taken by Prof. G. A. D. Haslewood.

Tea will be served in the Staff Common Room at 4.30 p.m., and a cordial invitation is extended to all members of the Teaching and Research Staffs of the Hospital and Medical and Dental Schools.

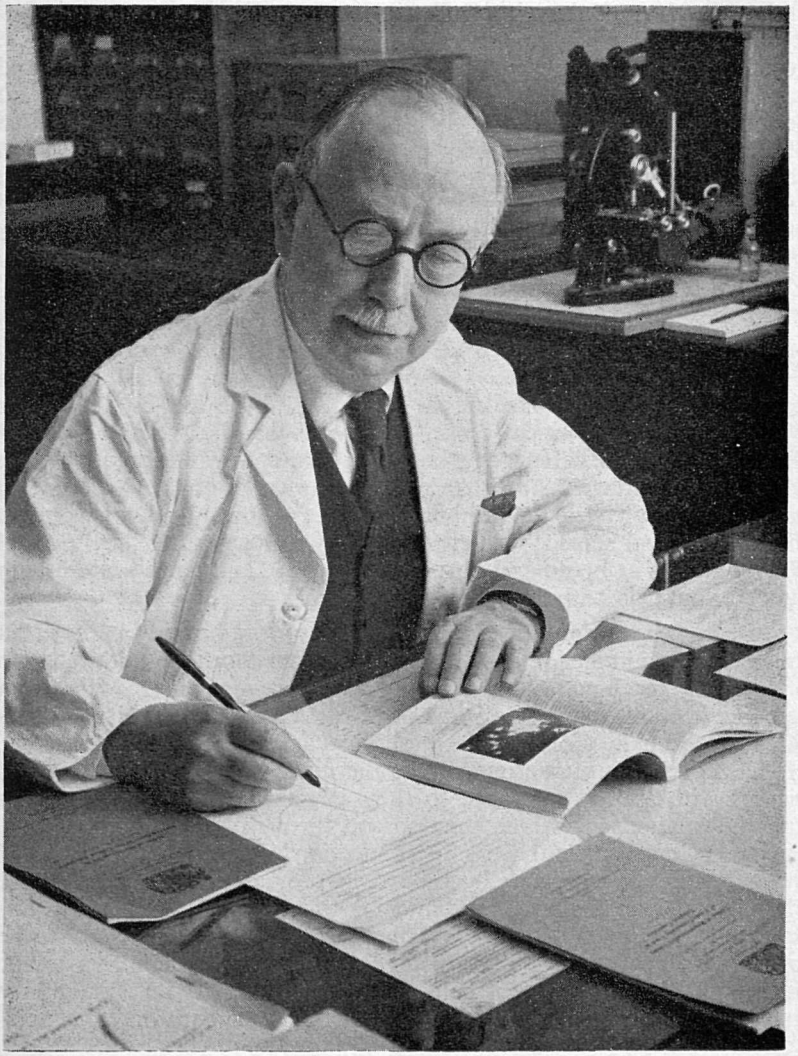
MARJORIE J. HILL,
Honorary Secretary.

Guy's Theatre Club

The Guy's Theatre Club will be presenting *The Strong Are Lonely,* by Fritz Hochwaelder, from December 2nd to 6th, in the Physiology Theatre. It is hoped that patrons, old and new, will give their valued support for the production of this stirring and unusual play. Tickets will be available outside Smith's bookshop, or by application to the House Manager.

Professor G. Payling Wright

AN APPRECIATION



It is hard to believe that George Payling Wright retired from the Sir William Dunn Chair of Pathology in September. He came to Guy's to take up this Chair in 1934, when he was 35 years old. He had already established for himself a distinguished reputation as a pathologist and experimentalist. He had won, in 1915, an Open Scholarship at Exeter College, Oxford, but in the same year he

entered the Army, serving as a gunner in France. On his demobilization in 1919 he returned to Oxford and then gained first class honours in physiology in 1921. After a short spell as a teacher at Jesus he went to University College Hospital, London, and took his Oxford medical degree in 1924. He spent the next year in teaching and research at University College Hospital. Having won a Rockefeller Travelling Scholarship he then worked for a year in America, at Washington University, St. Louis. He returned to London and was elected Graham Scholar at University College Hospital Medical School, London. He held this scholarship until 1928 and then obtained a Research Fellowship at Harvard Medical School in Boston where he remained for three years working under E. J. Cohn. In 1931 he returned to University College Hospital, London, where he became assistant Lecturer in Morbid Anatomy and Curator of the Museum and Pathologist to the Hospital. He stayed there for nearly four years until his appointment at Guy's.

For a few years between his appointment at Guy's and the beginning of the Second World War, Payling Wright was able to lay the foundations of the many new developments in Pathology which occurred during his tenure of the Chair. This he did in a literal as well as in a metaphorical sense, because it was he who was one of the driving forces behind the building of the New Pathology Block which was completed shortly before the war broke out. This building provided the physical environment for the astonishing expansion in the pathological sciences which made Guy's Hospital Medical School widely known at home and abroad for its wide and varied interests in every branch of pathology.

In this expansion, Payling Wright's contribution may be assessed under four main headings—his own research work, his stimulus to others, his teaching and his philosophy of medicine. His own research work through it all has been of the highest quality. Much of it has been in what can be described as experimental pathology. He has covered in numerous papers the mode of action of toxins and viruses with special reference to their effects on the nervous system and the methods by which they spread through the nervous system. His recent experimental work in connection with the pathogenesis of the demyelinating diseases succeeded in providing an answer to one of the questions that are fundamental to our understanding of this important group of diseases; by the use of radio active isotopes he and his colleagues were able to demonstrate that, in contrast to the nerve cell bodies and glial cells of the central nervous system, the myelin sheaths of the nerve fibres, when once laid down, are metabolically stable.

Increasingly as the years passed, Payling Wright collaborated with enthusiastic colleagues, many of whom have established their own reputation in different fields of pathology and bacteriology. Through all these years Payling Wright has never failed to give encouragement to younger men; and many of them must remember how ready he has always been to keep himself in the background and give the greatest possible credit to his collaborators.

Payling Wright's physiological training and his scientific approach have given his teaching of pathology a character all its own. A sound morbid anatomist himself, with an extensive experience of post-mortem work and histology behind him, he has always seen clearly that pathology in the widest sense extends over the whole of medicine and can, in fact, be equated with the scientific study of medicine. To a man like Payling Wright the teaching of pathology is really the teaching of a scientific approach to every kind of medical and surgical problem. His interest in the nervous system led him to realise the paucity of work in experimental neuropathology in this country, and also the likely harvests that were to be reaped from a broadly based, experimental approach to some of the unsolved problems of neurology. With a view to stimulating the interest of young clinicians, pathologists and biochemists in these matters he organized a strikingly successful Symposium on New Approaches in Neuropathology at Wye College in the summer of 1962. It was attended by a large group of young people from many parts of the country, and the interest engendered by it exceeded even his highest hopes.

In his philosophical approach to problems of medicine and medical research, Payling Wright's approach has been characteristically broad. A laboratory worker who loves working at the bench and who is keenly interested in techniques and their applications, he has also been intensely aware of the social problems of our time and of the rôle of the pathologist in helping to investigate and analyse them.

All these aspects of his work came together in his great text-book, "An Introduction to Pathology", and contributed to the immediate success of its first edition published in 1950 and the continued success of subsequent editions.

Outside medicine Payling Wright's interests range widely. He is unusually well-informed in politics, history, sociology, art and science; and he could always be relied upon to produce something new from his store of experience and reading.

Those who have been lucky enough to know Payling Wright personally and closely, know what a truly remarkable man he is. There must be very few men who combine, in one personality, so many diverse qualities. Scientifically he is ruthlessly honest, self-critical and critical of others. But his criticism is never malicious and always constructive rather than destructive. To younger men he has always been courteous, encouraging and stimulating. No visitor who came to ask his advice or help has ever been made to feel unwelcome and he has been more generous than most men to both senior and junior workers who always knew that they would get a warm welcome and a great deal of sound practical advice as well.

Payling Wright's retirement will be a great loss to Guy's, but it is good to know that he will continue in active research. Those who know him can be confident that his enthusiasm will be unabated, and hope that for many years he will continue to make contributions to pathology and the medical sciences.

A SCIENTIFIC BACKGROUND TO CLINICAL MEDICINE 15

The Pathogenesis of Cancer

by J. O. LAWS

Department of Experimental Pathology and Cancer Research
School of Medicine, University of Leeds.

Many of the articles in this series have dealt with topics which have a good factual foundation on which various theoretical approaches may be based. Carcinogenesis on the other hand is a battleground of theories few of which have any direct factual backing, although there is usually some circumstantial evidence to connect the theory with the process itself. We must therefore realise that in the succeeding discussion when we are dealing with experimental facts, whether they concern changes in the chromosomes, the action of viruses, the properties of the cell surface or the immunological characteristics of the cell, some of these phenomena may not in fact be directly connected with the process of carcinogenesis. We know nothing of the actual biological processes at work. We can only infer from our reasoning that certain factors either influence the process, or are influenced in the course of the process, and that therefore such factors are of possible importance in relation to the process itself.

Protests may be raised at this point. Surely polyoma virus causes cancer? Surely irradiation and chemicals can cause cancer? Certainly the action of these factors does result in the appearance of cancer, but as G. W. Nicholson so ably pointed out in his "Studies in tumour formation", first published in the *Guy's Hospital Reports* between 1921 and 1938, biological processes are not "caused", or only in a strictly limited sense. The process may be influenced to some extent by external factors which for instance may lead to its occurrence in a particular place at a particular time. It may, and in fact usually does, occur without the intervention of any such factor that we at present know of. Moreover, once started, it continues on a path which is determined by internal factors singularly uninfluenced by external events. Thus the study of external or "aetiological" factors has a strictly limited role, particularly from a clinical point of view. If such factors can be eliminated, as in the case of certain industrial cancers, a useful result has of course been achieved. As a practical method of producing cancers for further study such factors are of importance in experimental work, but we shall not go further into this aspect in this article. We shall concentrate rather on the active process of carcinogenesis, the "pathogenesis" of cancer.

A further objection may be raised at this point. If we know nothing of the biological process of carcinogenesis, of the pathogenesis of cancer, what is there to write about? One answer to this would be, the speculations and theorisations of the past hundred years, but to put it thus baldly would be unfair to writer and reader. This nevertheless pin-points one of the chief difficulties of the problem, and a continuing source of weakness in cancer research.

The question is where to start. The beginning, maybe, or perhaps the end, but oddly enough many theories seem to start in the middle. The difficulties can be illustrated by considering the events which follow the application to a tissue of some stimulus, either chemical, physical or viral, which we know will lead to the appearance of cancer. We can say within a little in such a case when the process started, but can only roughly estimate its extent since the latent period before the appearance of a cancer may range from fourteen days to fourteen years, and for most of that time nothing very obvious is found to occur by any means which has been used so far. As regards the place of origin, we have some idea of the area of tissue involved, but this normally includes a large number of cells, and arguments still continue as to whether a cancer arises in one or in a number of cells. Since the cancerous process is a continuous one, with many stages, it is probable that such arguments miss the point since some cells may be at an early precancerous stage while others have reached a stage in which their presence as cancer becomes apparent. Nevertheless, if it is difficult to pin-point one cell as the source of a cancer, how much more, to find out at which point within the cell the changes have occurred. Some of the complexities of cell structure as demonstrated by modern methods have been dealt with in earlier articles in this series. How are we to decide where in this veritable maze the changes important for carcinogenesis occur? When we add that such changes may be multiple, and that they are almost certainly accompanied by secondary changes not immediately concerned with the process, it is clear that our problem is no simple one. Moreover, the behavioural characteristics of cancer depend not only on the behaviour of the individual cell, but also on intercellular relationships, as for example when invasion of normal tissue occurs, so the field we have to cover becomes even wider.

How then has this problem been tackled, and how have we managed to make any progress in investigation? All modern theories stem from certain known facts about cancer. Firstly, the condition is normally progressive in time and often in character. That is to say that the mass of cells enlarges by cell division, and that, by the process which Foulds has called "progression", the behaviour of the mass of tissue may change so that the growth becomes, e.g., more invasive, or resistant to a form of treatment to which it at first responded, or less histologically differentiated. Almost any character of the cancer may be involved in such "progression". Secondly, we have the known clinical facts about the behaviour of cancer; not only does the mass enlarge but it invades and metastasises. Thirdly there are certain properties of cancers established in the laboratory

which turn out to be different from the properties of the corresponding normal cells from which the cancer has presumably arisen, although not always different from those of all normal cells. These include biochemical activities, immunological properties, surface changes, etc.

The first of the modern theories of carcinogenesis was put forward by Ludford in 1929 and is still, implicitly if not explicitly, accepted by many modern workers. This is the "somatic mutation" theory. It is based on the steadily progressive nature of the disease in the absence of external stimuli, and the relative stability of the cancer cell population at one time. Taken at its face value the term only indicates that the somatic cells involved are changed, which is obvious, and to give it a scientific validity we assume that the mutations concerned are, as in the case of the germ cells, in the genetic mechanism of the cell, the genes, chromosomes or in general, the cell nucleus. Since this idea was put forward there has been a massive amount of work on the changes found in the nucleus of cancer cells, and there is no lack of evidence that the nuclear mechanism is often gravely disturbed. Abnormalities of the chromosomes are frequently seen, and if they are not universally found, it is easy to assume that slighter but still important changes which we cannot at the moment detect are present in all cases, Alterations are found, too, in the biochemical mechanisms of DNA synthesis, etc. Altogether there is a formidable block of evidence showing that nuclear changes occur in cancers.

A second theory which has some adherents arose out of biochemical investigation of cancer in the laboratory. This is the theory of Warburg which ascribed the cancerous change to alterations in the respiratory mechanism of the cancer cell whereby it became capable of aerobic glycolysis, that is to say that in presence of oxygen it could not only respire, perhaps to a diminished extent, but could also break down sugar to lactic acid by the route normally only found to be active under anaerobic conditions, and not active in most adult tissue cells at all. Such activity is, however, now known to be present in some normal cells, e.g. in the embryo, and in spite of more recent modifications, this theory is not now in great favour.

Another theory which arose from biochemical study, this time of the changes in cells which occur during their treatment with chemical carcinogens, concerns the cell enzymes. It has been established that most chemical carcinogens combine with constituents of the cells of affected organs to form relatively stable complexes. Such combination is not usually found in cells of the cancers formed in such organs. It is therefore suggested that the combination has resulted finally in the deletion of the cell constituents concerned. The theory then goes on to suggest that such constituents are enzymes concerned in some way with the control of cell division, the intercellular relationships, etc., so that their disappearance results in cancerous behaviour.

More recently another theory has been put forward by Green which is in some aspects complementary to this last one; it is the immunological theory, for the most recent exposition of which see Green and Anthony (1963). According to this theory alterations are brought about in cell components concerned with the control of the behaviour of the cell, either by the action of chemicals as in the last theory or by as yet unknown factors. Once such changes have occurred, however, it is suggested that the altered components become auto-antigenic, that is capable of leading to the production of antibodies to themselves by the host, a situation normally impossible, although now believed to occur also in some other "auto-immune" diseases. The effect of the antibodies is to lead to further change or deletion of the originally altered cell components, again resulting in cancerous behaviour. It is further suggested that the cell components involved are those classed together as "tissue (or cell) specific antigens" although it should be noted that they are not normally antigens in the host but simply cell components concerned with cell relationships in some way. Only if changed, or introduced artificially into another animal do they act as antigens.

Table I

THEORIES

Type of Theory	*Site of action in cell* (see Fig. 1)	*Emphasis on ;*
Somatic mutation	I	Nuclear changes
Enzyme deletion and metabolic theories	II	Changes in cytoplasm and endoplasmic reticulum
Immunological theory	III	Changes in tissue and cell-specific factors on surface and endoplasmic reticulum
Approach from functional biology and clinical aspects	IV	Changes in adhesion of cells, cell surface charge, intercellular relationships (mainly cell surface)

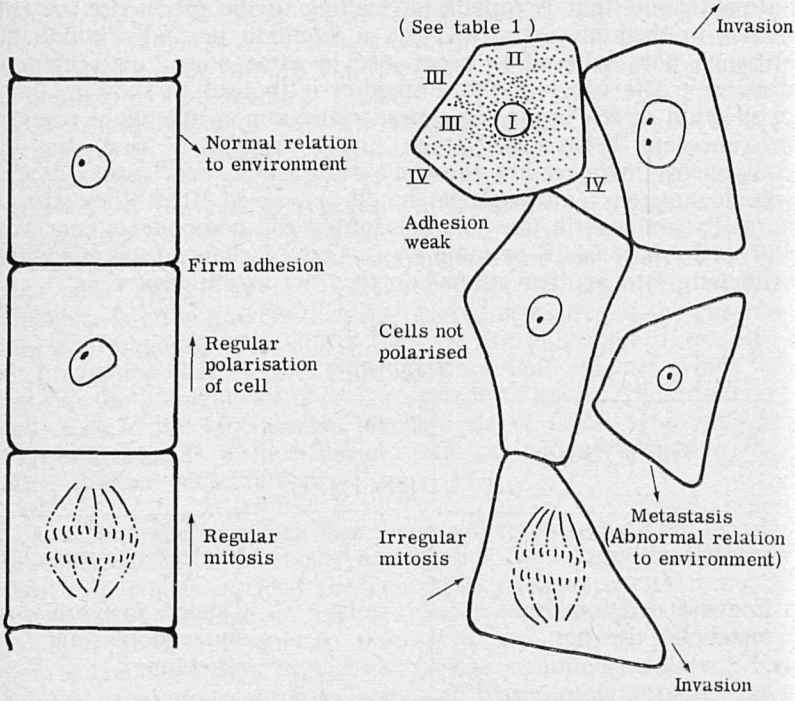
All these theories, with the probable exception of Warburg's, are capable of accounting for a series of changes in the cells preceding or succeeding the clinical presentation of the cancer, itself only an incidental episode in the biological development of the growth the

NORMAL TISSUE

1. CONTROL OF CELL DIVISION
2. CELLULAR INTER-RELATIONSHIPS, AND THE TISSUE PATTERN IN RELATION TO THE ENVIRONMENT IS NORMAL

CANCER TISSUE

1. EXCESS CELL DIVISION
2. CELLULAR INTER-RELATIONSHIPS ABNORMAL, LEADING TO INVASION AND METASTASIS



timing of which is largely accidental. Berenblum (1954) put forward the idea of a two-stage process of carcinogenesis, the first stage leading to a pre-cancerous condition which remained latent until further changes, either slowly progressive or supervening suddenly after a period, lead to the final carcinogenic change. This is supported by the fact that one painting of a powerful chemical carcinogen on the skin is enough to lead to the production of cancer, but only after a longish latent period. In view of the progressive nature of cancerous growth, it appears unlikely that this is the whole story but it has the merit of focusing attention on the mystery of the long latent period found in most experimental cancers. Recently there has been a lot of attention focused on the possibility of several successive mutations being needed to produce cancer, and Burch (1963) has produced a statistical analysis of such possibilities and also suggested methods whereby genetic changes could be translated into abnormalities of protein metabolism.

It will be seen therefore that there are many theories which attempt to explain carcinogenesis from the beginning (somatic mutation, enzyme deletion) or from the middle (immunological theory). Although they all point the way forward and have stimulated much valuable work, none so far quite reached the end. That is to say that none of them explain the method of production of those changes in the cells which cause the tumour to show the type of behaviour which we know that it does clinically. The distance between the theory of somatic mutation and the fact of invasiveness is still great in spite of recent extensions of the theory mentioned above. Similarly there is a great gap between the theory of enzyme deletion and the fact of metastasis.

It is for this reason that work has recently become more prominent in fields which may lie nearer to the actual clinical manifestations than do those discussed so far, that is they are starting at the end and attempting to work backwards.

If one applies this method it is clear that the basic disorders of cancer are concerned first with control of cell division and second with intercellular relationships. Of these the first is essential since without cell division no mass of cells can be built up, but the rate of cell division need not be in excess of what is normally possible. Moreover, cell division by itself merely produces a mass of normal cells, not a cancer. The other deviations from normal are therefore in some ways the more important. How are they to be translated into terms of systems which can be investigated? Since nothing is known of the exact biological mechanism of invasiveness and metastasis the approach is again theoretical but need go no further in the first place than assuming that since cells are in contact solely by their surfaces, intercellular relationships, and also relationships between the cells and the fluid environment around them, must be through the surface. The surfaces must also determine cell polarity, the directional factor in growth and function. Therefore however such changes may originate inside the cells and by whatever mechanism, the final path which leads to the altered behaviour must involve the cell surface. The behaviour and constitution of the cell surface and changes which occur under varying circumstances including normal growth, carcinogenesis and in the formed cancer are therefore being studied by a variety of means. Various properties of the surface such as charge, adhesiveness and thickness, and the constitution of the various layers which make up the so-called surface are all under investigation. No all-embracing theory has been enunciated to relate such changes and none appears to be needed in our present state of knowledge, but it appears possible that real advances in our understanding of the clinical behaviour of cancer may stem from this line of investigation.

To sum up, it is clear that theories of carcinogenesis and the ways of approaching the problem are many. The reason for this is also clear, that all are based on reasoning and analogy and not on facts, since we have no facts about the central aspects of the process

of carcinogenesis properly speaking. This short account has only outlined some of the views held by workers in this field but it should serve to dispel any facile optimism about the problem. We need more facts, in particular those which serve to gather together other pieces of the puzzle into a recognisable part of the total picture. Unfortunately we cannot predict where these will turn up. We can however plan our approach with an eye to the clinical and biological facts of established cancer and its behaviour and it may be that this line may prove more fruitful than some which have been pursued in the past.

References and Further Reading

BERENBLUM, I. (1954), *Cancer Research*, **14**, 471.
BURCH, P. R. J. (1963), *Nature (Lond.)*, **197**, 1145.
GREEN, H. N. and ANTHONY, H. M. (1963), *The Practitioner, London* **190**, 705.
HARRIS, R. J. C. (1962), *Cancer*, Penguin Books, London.
LAWS, J. O. (1963), *Guy's Hospital Reports*, **112**, 449.
LUDFORD, R. D. (1929), *Annual Report of the Imperial Cancer Research Fund.*
NICHOLSON, G. W. (1950). Collected edition (Ed. R. Willis), *Studies on Tumour Formation*. Butterworth, London.

NOTICES

Guy's Music Club

This year the Music Club is producing *The Messiah* by G. F. Handel on Tuesday, 10th December, at 7.30 p.m. in Southwark Cathedral. As there is only one performance it is hoped that enthusiastic support will be received from many Hospital people and their friends. Tickets are available from W. H. Smith's bookstall, the Secretary, members of the Music Club and also at the door on the night of the performance.

P. K. PEACE, *Hon. Secretary, Music Club.*

Carol Service

A warm invitation is extended to all associated with Guy's to attend a Carol Service to be held in the Chapel on Thursday, December 5th, at 7.15 p.m. The service will be conducted by the Chaplain, and the preacher will be the Rev. J. R. Bournon. Light refreshments will be available after the service.

JOHN SEARLE.

Landon Tea Party

This year the Landon Tea Party will be held on Monday, December 23rd, from 3 p.m. to 6 p.m., in the Charterhouse Girls' Club. We very much hope that any members of the staff who are interested will look in to see the children on this day.

DORIS CHRIMES,
Outpatient Department, Guy's Hospital.

The ALCOHOLIC is your PATIENT

by BRENDAN HICKS

First the man takes a drink,
Then the drink takes a drink,
Then the drink takes the man.

Chinese proverb.

Sin, symptom or disease? That is the fundamental question about alcoholic addiction. While ethnic and religious groups have always varied in their attitudes to the alcoholic and his drinking, our own society as a whole has undoubtedly preferred to condemn him rather than help him and to regard him if not as a villain, then as a buffoon. Even the medical profession has been reluctant to see in the alcoholic not a moral degenerate but a man who is sick. It is in the belief that many in the profession and family doctors in particular, are still far from the modern concepts of alcoholism that this article is so titled.

In this context, the alcoholic can be loosely defined as *an excessive drinker, to the extent that alcohol interferes with his mental or physical health, interpersonal relationships and normal social or economic functioning.* Implicit in this definition is also the fact that the alcoholic either cannot recognise these changes, or, recognising them, is yet unable to control his alcohol consumption. He drinks in spite of himself. The crucial hallmarks of the alcoholic are his absolute dependence on alcohol and his loss of control over his drinking.

On such a definition, the W.H.O. estimated that there must be 500,000 alcoholics in England, Wales and Scotland, of whom some 100,000 would be " severe and chronic " addicts. That is the size of the problem and the size of the stigma on our social conscience.

The Case for Diagnosis

A diagnosis of alcoholism is rarely a matter of the patient coming to the surgery with a simple complaint of excessive drinking, though sometimes it is not far from that. The alcoholic usually reaches the point where he desperately wants help, and he may go first to his wife, a friend, a priest . . . or to his doctor. Help may not be sought directly for a drinking problem, but the physician may find physical changes suggesting high alcohol intake, or it may be the wife that brings the problem to the doctor's attention. Disintegration of the family, a previously responsible man losing a job, a second arrest for drunken driving —these may be the first clues to an alcoholic needing help. How does one recognise the alcoholic? The shortest answer is a simple one. First, by knowing the patient; secondly, by knowing the landmarks on the sad trail of alcoholism, landmarks which can now be mapped out with some confidence.

The Disease Process

Many alcoholics in retrospect think they can mark the period, even the day or the event, when their transition from heavy drinking to something "different" took place, when for the first time they *needed* a drink

rather than wanted one. This is the beginning of the addict's special relationship with alcohol, a relationship which he does not share—and knows he does not share—with the normal drinker. His mental preoccupation with alcohol may leave the patient with guilt feelings about his habits, especially as he may be (literally) "knocking back" a few whiskies before any function of a social nature. His drinking then becomes more secretive, he avoids talking about drink and becomes increasingly sensitive to its mention. He is often scared by an increasing incidence of alcoholic amnesias, such that he can remember nothing of a preceding evening spent drinking. This may drive him to attempt periods of total abstinence, a reaction which forms, in the absence of medical advice, a very sensitive key to the patient's emotional relationship with alcohol.

The critical stage in the alcoholic's degeneration is undoubtedly that at which he first loses control of his drinking, when he must drink to the point where only external factors or unconsciousness force him to stop. This acute loss of control is in a sense a reflection of his chronic dependence on alcohol for his daily life. Some heavy drinkers occasionally experience a similar loss of control, without the dependence, but for the alcoholic this is the point of no return. Without help, without insight, his only path is now to self-destruction, precipitously or more slowly.

His behaviour changes as he tries to smother guilt with aggression. Instead of arranging his drinking around normal activities, he now begins to arrange his life around his drinking; his existence becomes progressively more egocentric. As he loses his friends, family and often his job, he sinks deeper into self-pity and looks for his only comfort to alcohol. His week-end drinking becomes extended into the bouts or "benders" lasting many days, and social rejection drives him further into himself. With his impairment of both moral and rational thought, nothing is too bad to drink, and no one is too low to drink it with. His drinking is now obsessive. A physical and mental wreck, he cannot get up without a drink, he is physically incapable of walking up cannot get up without a drink, he is physically incapable of walking up the street without alcohol inside him. The drink . . . . . ultimately . . . has taken the man.

The end of this road is a precipice of despair; it is often said that no alcoholic will help himself until he feels the full, bitter depth of this final despair. From here there are only two escapes for the alcoholic—death, or treatment. It is as simple, and as vital, as that.

The Type of Man

Attempts to define "an alcoholic personality" have met with very little success in the past. There are certain common characteristics of these patients, which will be discussed with the aetiology of the condition, but these are shared with too many non-alcoholics to be called specific in any way. Yet it is worthwhile so to clarify our conception of the alcoholic, to make some broad classification of the patients one is likely to find under treatment.

It must be emphasised that we are concerned here with the underlying personality of the patient before the addiction took effect, because

with the progress of the condition there inevitably emerges a "secondary personality" that distorts much that has gone before and is deceivingly constant between patients. Nor are we discussing the acute psychoses, such as Korsakoff's, which may complicate the picture.

Alcoholics have been divided between:—

(i) the superficially-normal personalities,
(ii) the manifest neurotics,
(iii) the psychotic patients,
(iv) the psychopaths.

Two implications of this classification (and it is not the only one) are of some importance, and deserve emphasis.

The first implication relates to the treatment of the alcoholic and will be considered with that aspect of the disease.

The second is that some individuals who would be regarded as "normal" by the psychiatrist can become alcoholic. Obviously, any discussion of psychological "normality" must be riddled with controversy and untested assertion, particularly where the conception of a disease, and hence its proper treatment, may be influenced by the therapist's opinions. But in the face of possible objections, perhaps one ought to assert fairly that many men who become alcoholics would never be considered, before or after their alcoholism, to be remotely neurotic, let alone psychotic or worse. These "normal" personalities include men who, before their drinking became malignant, were often happily married and good fathers, held down responsible jobs (some in high positions), and—met after recovery—could only be described as wholly pleasant and balanced personalities. There may well be psychological defects in such men, but no more than in many of us. It would be a tragedy if the public image of the alcoholic was to be turned with great difficulty from the damning generalisation of "morally sick', only to slip back into the easy attitude of "mentally sick".

The Aetiology of the Disease

In offering any explanation of alcoholic addiction one is confronted by a bewildering variety of form and personality and a challenging lack of scientific evidence. The search is for common factors, in constitution or in external influences, which may be shared between alcoholic patients and not by normal or even heavy non-addicted drinkers. Only a brief abstract of the findings to date can be offered here.

Physical Theories

The alcoholic situation consists essentially of a craving for or dependence on alcohol, which the patient is incapable of resisting. Two elements are here contained. The "craving" might be abnormally intense in the alcoholic, or his "will to resist" might be abnormally weak; the former could have a physical explanation, while for the latter psychological factors must be invoked.

Many workers would certainly claim that the specific effect of alcohol is from an early age different in alcoholic and non-alcoholic patients, even before signs of addiction appear The acute loss of control

over drinking in the early bouts again tempts one towards a concept of some physical sensitivity to alcohol which makes this drug peculiarly attractive—and addictive—to a minority of people. This hypothesis is especially interesting in the instance of the apparently normal personality, or that of the recovered alcoholic who relapses following a single sherry after going "dry" for three years or so.

Yet, despite extensive investigation into the biochemical, hormonal and metabolic constitution of the alcoholic, there is still no sound evidence for such an abnormal physical reaction. It is known that the metabolic rates of alcoholics (without cirrhosis of the liver) rise by 25—50 per cent on ingestion of moderate amounts of alcohol, a finding absent in normal individuals. This is associated with increased serum catalase activity, and it is thought but not proven that there is acceleration of the conversion of alcohol to acetyl-CoA along a catalase pathway. Even this evidence, however, refers to changes which are probably secondary rather than contributary to the condition. There is need for more biochemical comparison between the alcoholic, the heavy drinker, and the recovered alcoholic.

Psychological Theories

In all alcoholic patients, either as anaesthetic or as substitute, alcohol fulfils some very real psychological need—the only question is whether the need was always there, or whether it develops with the condition. A recent analysis of a large group of alcoholics summarised the psychological make-up of these patients under four principal headings; most patients fall into one of these four groups, and many into more than one group. It is to be noted that this analysis spotlights underlying causes, not symptoms, and among these categories might be found many of the "superficially-normal" patients and others in the earlier classification.

Maternal dependence may be discerned from the life-history, and may extend to the patient's relationship with his wife. The early pattern may be one of over-protection, domination or simply deprivation. It is suggested that alcohol may be a short-cut to the helplessness and dependence of childhood, to the "auto-erotic satisfaction of earliest years".

Sexual factors, of the Freudian type, probably play a major rôle in the condition of many alcoholics included in the other groups, and may take the form of repressed Oedipus desires, a castration complex or latent homosexuality.

Social insecurity may again take various forms, different in origin and manifestation. The patient with a gross inferiority complex may use alcohol to silence his anxieties. Some patients find difficulty in social contact, in "finding oneness with other people", and alcohol helps them by its effects on themselves and their company. The man deprived of affection in early years may use alcohol in a desperate bid for approval and acceptance by society.

Narcosis is a word often used in connection with the alcoholic, and it is always part of the final vicious circle in which the alcoholic drinks to forget his problems, and so aggravates them. In a few patients this escapism is the major feature of their psychological condition.

Although this analysis covers most of the normal and neurotic patients, the psychotics and psychopaths form a special group both in terms of aetiology and their poor reaction to treatment. Excluding this special group, the onset of alcoholism may well be related to the conjunction of pre-disposing factors in the patient, and precipitating factors in his life-experiences. Whether biochemical constitution has indeed a part to play has yet to be seen.

The Upward Path

The approach to treatment is naturally related to one's concept of the disease.

On this basis both the success and limitations of a movement such as Alcoholics Anonymous can be understood. To quote A.A., "Cultivate gratitude that you are only a *victim of disease* called Alcoholism. . ." and "Associate a drink as being *the single cause* of all the misery, shame and mortification you have ever known. . ." (my italics). Although this is advice directed at the man tempted to drink, it sums up much of A.A.'s attitude to the condition: the demon is drink, alcohol is the width, breadth and length of my problem, no doctor can ever help me. The weakness is clear, especially for the patient who is indeed mentally sick. The strength lies in the directness of the appeal—"Just for today, I will not take a drink"—in the overall simplicity of philosophy, and the psychological support of others in similar straits.

For the psychiatrist dealing with the problem there is obviously more to it than total abstinence from alcohol, although this is absolutely vital. The approach varies from clinic to clinic and here I can only describe useful procedures without fairly commenting on their use. The common factor required for any treatment to be successful is total sincerity on the part of the alcoholic. Until a man reaches rock-bottom, and can honestly say, "I am an alcoholic, I want help", then no treatment in the world will help him. Not that rock-bottom is always at the end of the sad road described earlier; the gutter may mark rock-bottom for the working-man, while losing the Bentley may mark the end for the company director. In the face of any denial, the therapist must first tear down the blinds, show the patient his shattered life, and wait.

This is not the place to discuss detoxication but this is obviously necessary before intensive psychotherapy can take place usefully. From this point psychotherapy takes the dual form of analytical and supportive therapy.

Analytical therapy is aimed at giving the patient insight into his own personality problems and with it the undestanding of his own "need" to drink. Personal discussion with the therapist, sometimes with hypnosis, and group therapy with about 12—18 alcoholics, are used to varying extents in different clinics, all of which defend the virtues of their approach.

Supportive therapy makes much use of the supportive nature of any group of patients, rather after the manner of A.A., and sometimes making use of A.A. This may be augmented by positive suggestions from the therapist, occasionally using hypnosis. A few clinics use the Seattle "aver-

sion therapy", to form a conditioned relationship between alcohol and unpleasant sensations; this controversial treatment has been severely criticised, though not by patients who found it helpful. The substance Antabuse (Disulphiram), which makes alcohol an emetic, is also used to strengthen the patient's resolve in the difficult early phase of sobriety. Supportive therapy must provide the patient with a will to live again, and determination and strength to manage it without the bottle.

The Future for the Patient

The success of any treatment, as measured by the proportion of patients who have been appreciably helped, or as the proportion who do not touch alcohol again having left the clinic, is impossible to assess adequately. Selection of patients, difficulty of follow-up, the question of short relapses with recovery—to give statistics would be misleading and probably unjust. One can only say that in this classification, most of the superficially-normal patients will recover with treatment, and a good proportion of the neurotic patients, a few of the psychotic patients, and very few of the psychopaths do so.

In no sense is this recovery a cure. The alcoholic is always just one drink away from his addiction. Time and again, six months' sobriety . . . over-confidence . . . one drink . . . and the patient is back in the clinic. Until March, 1962, no qualification would be necessary at this stage, but then a paper appeared describing social drinking (of the order of three pints of beer a day) in seven recovered alcoholics out of 93 treated. This paper raised a polite storm, as befits a challenge to an idea so basic to the classical views of the condition. Most other therapists with long experience remain sceptical of the findings reported, but recognise the important implications with regard to our ideas about the condition.

The Future for Society

The existence of 500,000 alcoholics in this country implies that about one per cent of the total population, and hence a much higher proportion of the drinking population, are addicted to alcohol. But the alcoholic is on the whole a secret drinker, and when he is suspected, he is not understood. The terrifying numbers are not those alcoholics who present themselves at alcoholic clinics, but rather those who do not. The blame lies on many heads, and the problem is not only a lack of awareness. A family doctor, alcoholic, was eventually referred to a clinic by one of his patients—having failed to get help or even information from a wide circle of colleagues. Recognition, understanding and communication are all very necessary.

If the incidence of alcoholism is to be reduced, then this can only be part of a general effort towards bettering the mental health of the community. Prohibition has failed, and will fail again. Meanwhile, more research is needed into both the biochemical and psycho-social background of normal and abnormal drinking. "There are only two escapes for the alcoholic. Death, or treatment. It is as simple, and as vital, as that."

I am indebted to Dr. S. Mackeith and the Staff of Pinel House, Warlingham Park Hospital, to Dr. Lincoln Williams, and to certain alcoholics, who were so generous with their interest and assistance. The opinions expressed remain, entirely my responsibility.

REFERENCES.

1. Tomorrow Will Be Sober. Lincoln Williams. Cassell. London. 1960.
2. Alcoholic Addiction. Howard Jones. Tavistock Press. London. 1963.
3. Wld. Hlth. Org. techn. Rep. Ser. 1955. **94**.
4. Wld. Hlth. Org. techn. Rep: Ser 1954 **84**.
5. Kalant, H. Quart J. Stud. Alc. 1962, **23**, 52.
6. Tiebart, H. M. Quart. J. Stud. Alc. 1951, **12**, 52.
7. Davies, D. L., Quart. J. Stud. Alc. . 1962, **23**, 94.

References 1 *and* 2 *are recommended for further reading.*

CORRESPONDENCE

Sir Charles Symonds Portrait Fund

SIR, It is proposed to have three drawings made of Sir Charles Symonds by Andrew Freeth, A.R.A.; one will be presented to Sir Charles, one will go to Queen's Square and the other to Guy's. A letter has been sent in our names and those of Lord Brain and Dr. Denis Williams to the Guy's Staff and Sir Charles' former Registrars and House Physicians asking if they would like to subscribe. It occurred to us that there are friends and former students who might like to subscribe to the Fund. Subscriptions should be sent to the Sir Charles Symonds Portrait Fund, Guy's Hospital Medical School, London, S.E.1. Subscriptions should not exceed five guineas and any sum less than this amount will be welcome.

Yours, etc. ,

E. R. BOLAND.
J. J. CONYBEARE.

Guy's Hospital.

Nurses and Students?

SIR, It has become increasingly obvious to many members of both the nursing and medical staff that the methods of forming social contacts between nursing and medical students seem to be greatly lacking. One is aware that there are many societies covering activities within the hospital, but these lack the support of the student nurses partly because of poor publicity, but mainly due to the inconvenient times that meetings are held, which appear never to coincide with nurses' off-duty.

It was recently suggested by our branch of the Student Nurses' Association to the Guy's Students' Union that steps should be taken to overcome these difficulties by the formation of a representative committee of students and student nurses. This request appears to have been totally ignored and one can only assume that the students are unaware of the intellectual and social advantages that could not only improve the social atmosphere of the hospital, but also the professional bond which forms the basis of our work here.

Is this apathetic state to continue?

Yours, etc.,

S. C. CLAY.
E. F. HOAD.
V. S. JONES.
M. P. HUTTON.
M. J. KNIGHT.
C. V. HEYWORTH.

The Nurses' Home,
Guy's Hospital.

REVIEWS

DISEASES OF THE ALIMENTARY TRACT

by C. F. Hawkins. Heinemann. 1963. Pp. 411. *Price* 60s.

The author has set out to produce in one volumne a survey of clinical gastroenterology with particular reference to recent advances. There is no doubt that he has achieved his aim.

Refreshingly written, this book avoids the repetition of outmoded ideas which tend to occur with successive editions of many general textbooks, furthermore the limitations of certain of the conventional treatments is rightly emphasised. Recent advances concerning aetiology and diagnosis of the common disorders are fully discussed and, where appropriate, the differing theories are briefly summarized in such a manner that the reader may draw his own conclusions without being left confused. The chapters on steatorrhoea and other small bowel disorders are excellent, whilst those on gall bladder and pancreatic disease fall below the general high standard.

The book is well presented and very reasonable, and the production of X-ray plates is excellent, an up-to-date bibliography is primarily designed to encourage further study; the appendix contains details of over a dozen useful clinical diagnostic precedures.

Although primarily intended for the physician interested in this subject, it should give the senior student a much more enlightened insight than he can obtain from his general medical reading. At sixty shillings its value compares very favourably wiht other standard texts on "system disorders".

S. McHARDY-YOUNG.

HALE WHITE'S MATERIA MEDICA, PHARMACOLOGY AND THERAPEUTICS, by A. H. Douthwaite. 32nd Edition. Churchill. 1963. Pp. 519. *Price* 27s. 6d.

Dr. Douthwaite has been responsible for the thirteen editions of Hale-White published since 1931, and these figures alone are an indication of his success. Clearly, to review the thirty-second edition of a book which has been under continuous revision since 1892, savours of an act of piety. The fact that he is assisted by Dr. P. M. F. Bishop and Dr. Roy Goulding makes the task for a Guy's man even harder.

As its title suggests, it is intended to serve various functions. It provides an excellent section on the mysterious science of pharmacy and the preparation of drugs, and the notes on the pharmacology of the drugs mentioned are succinct and clear. Therapeutics is less served, however, and though it is good to note the final expulsion of the Imperial system of weights and measures, I should have liked to have seen more guidance given in discussion of such frequently encountered problems as the use of reserpine in hypertension or the prescribing of preparations such as hydrallazine, thyroid extract or bromides. The frequency of the severe toxic effects of the widely used phenylbutazone is not hinted at and this drug is afforded less space than, for example, tannic acid. Presumably this is because on a national scale it is taken by fewer people.

More serious, perhaps, is the fact that although this book contains a vast amount of up-to-date information in compact form, its convenience is marred by a confusing and seemingly old-fashioned layout. Presumably the chief function of this book must be that of a source of rapid and easy reference for the busy practitioner. This function is not assisted by the printers and their bewildering array of types.

These are minor drawbacks. The compression of such a massive amount of fact into a book of this size cannot be done without sacrifice. I have no doubt at all that this book will be found popular enough to last for a great many more editions and I hope that they will continue to appear under Dr. Douthwaite's name.

I. D. B. RENNIE.

SPORT

PENTATHLON

Just as Guy's were among the first clubs in Rugby and Boxing, so last year the Pentathlon Club was formed and thus was the first fully functioning civilian club in London to engage in this sport. The demands of its performers are great—for instance, a home fixture involves pistol shooting at Regent Street Poly.; horse-riding at Sidcup; fencing at Guy's gymnasium; running at Greenwich; and swimming at Bermondsey baths. The officers are imaginative and apparently prepared to take on any hurdle—and have twelve fixtures this year, including ones against Cambridge and Oxford Universities, the R.A.F. and Bristol.

The club, in its second season, are honoured to have Dr. P. Hume-Kendall as its President. The club has gained an outstanding fresher—who was placed fourth in the Schools Championships this year. Expense is, of course, a great problem, with equipment and horses to provide, but the individuals seem to be united in a common effort and look forward to promoting Inter-Hospital rivalry and establishing their club on a sound basis.

In the match against Cambridge University, N. S. Faithfull was second in the Fencing, scoring 12 out of a possible 20 victories, being beaten only by Bollobal, an experienced Hungarian penthathlete. Shooting left something to be desired, but perhaps this will improve when the club has its own pistols.

On the second day, in the running, J. Webb came 3rd, P. Wren and N. S. Young lost their way, while N. S. Faithfull came in very wet, and muddy, having disappeared up to his hip in mud, in two of the six water jumps he fell into. N. S. Young won the riding, but overall Cambridge won the event by 10.340 points to 8.180.

This is a young sport in Britain requiring a range of all round fitness and ability. More enthusiasts would be welcomed by N. S. Young (captain) and H. R. Thacker (Secretary).

BOXING

On 7th December, the Club are hosts to Trinity College, Dublin, and would welcome as much support as possible. The match is to be held in the Pavy Gymnasium.

The Officers of the Club are as follows:—

Captain—*T. Gibson.*
Vice-Captain—*K. C. J. Hughes.*
Hon. Secretary—*D. Edgar.*
Match Secretary—*W. Oryeama.*

SWIMMING

A very powerful team from Guy's gained a convincing victory in the United Hospitals Swimming Championships over St. Mary's Hospital, St. Barts Hospital coming third. R. Jones was outstanding individually, winning the men's 100 yards back stroke and 100 yards free style. Guy's overall strength was emphasised when they won the 4 x 100 yards medley relay and also 6 x 100 yards free style relay to give them the reward they deserved. Team: D. J. C. Barnes, R. Jones, B. Valentine, K. McGlynn, A. Forbes, J. Holland, D. Bartlett.

In the Water Polo Inter-Hospitals Competition, Guy's gained the highest honours by smothering Charing Cross to win 12—1. They then beat Kings 8—2, and finally the very strong St. Mary's team 5—3.

The success of the Swimming Club augurs well for the future, as many of its members will be present at the Hospital for a further two or three years.

CRICKET

The Annual General Meeting of the Cricket Club was held on Thursday, November 14th, at 1.30 p.m. in Classroom I.

Dr. E. R. Boland presided and the following elections were made for 1964. The President and Vice-Presidents were re-elected, and Professor W. J. H. Butterfield was elected unanimously to join the Club as a Vice-President. The Officers are as follows:—

Captain—*N. J. Knott.*
Vice-Captain—*H. W. MacGregor.*
Hon. Secretary—*M. Appleby.*
Hon. Treasurer—*G. Hambleton.*

RUGBY

GUY'S v. LONDON UNIVERSITY

At H.O.P. 13th November, 1963.

Result: won 12—3

A hospital victory by three tries and a dropped goal against a try was possibly a little flattering against a University side which put up a strong fight and showed up certain weaknesses in the Guy's XV. The ground was dry and there was a fairly stiff breeze blowing the length of the pitch when Guy's started with the latter in their favour. The forwards showed up well in the first few minutes, but it was soon evident that they were stones lighter in the pack and throughout the game the University dominated both the lines-out and the loose, whereas Guy's had the faster and surer handling outsides. The majority of the first half was spent in the London half—good high searching kicks by Edgar and MacGregor keeping them under constant pressure, but these were always dealt with by a very competent full back and no score had been contrived by half time.

The second half was more lively with the play again in the University half. After seventeen minutes Edgar dropped a goal from the '25', and five minutes later a blind-side break by MacGregor, from a loose heel, put Edgar over in the left corner for an unconverted try. The University then proceeded to kick themselves into the Guy's '25' and from a series of skirmishes all the way along the Hospital goal-line, eventually scored in the left corner—the conversion was unsuccessful. Before the final whistle Guy's scored two more unconverted tries—the first when Biggs caught a sliced drop at goal and went over and just before no-side Baker dropped on a rolling ball after a University man had been tackled over his own line, making the final score 12—3.

A good result in the end but the Hospital may well have benefitted more if our stronger backs had run with the ball as opposed to the constant kicking in the second half, particularly in view of the fact that the opposition were by then only too prepared for this manoeuvre.

IAN REEKIE.

Team: R. W. T. Myall; D. A. Biggs, C. J. Wright A. Allan, J. C. Thomas; A. Edgar, H. W. MacGregor; J. E. Davies, E. S. Price, A. Fisher; P. K. Peace, D. Hartley; R. Brown, D. Hendrick, I. A. Baker (Capt.).

ASSOCIATION FOOTBALL

GUY'S v. ST. MARY'S HOSPITAL

At H.O.P. 6th November, 1963

Result: won 3—0

On a damp afternoon, Guy's entertained St. Mary's Hospital in a United Hospitals League fixture.

Guy's began impressively. Moving the ball quickly from man to man they soon had the visitors defence in trouble and it came as no surprise when Guy's took the lead after ten minutes. After a short period of defensive play Guy's broke away quickly. Elias moved smoothly and intelligently down the wing, drew the defence and then gave Cutler the easiest of chances to score.

Play then became very scrappy until midway in the second half. For some reason, best known to themselves, Guy's gave up playing fine, open football and began to rely on short passes. Under the conditions these tactics were not only ineffective but also dangerous.

It took a "disallowed goal" to shake Guy's out of their slumber. Elias was the unfortunate one—his shot hit the upright and the ball appeared to cross the line before being cleared by the Mary's full-back. However, the referee decided it had not crossed the line. Apparently annoyed by this misfortune, Guy's began to attack with more venom. Within two minutes they had increased their lead. Quick thinking by Shepherd completely "wrong-footed" the Mary's defence and Atkins had little difficulty in beating the goalkeeper when the ball came to him.

Guy's quickly made it 3—0. Cutler sent Shepherd away and as the winger moved in he scored with a fine shot into the corner of the net.

Under the difficult playing conditions this was a good win by Guy's. The defence played well, as usual, but the attack appeared strikingly ineffective at times. This could probably be corrected quite easily if:—

(a) Shepherd moved more quickly from a defensive to an attacking position.

(b) Cutler was more alert to the ball pushed through the middle for him.

(c) Atkins brought himself more into the game. He is frequently caught watching or move-developing instead of taking part in it.

ALAN PALMER

Team: K. Hughes; R. Brander, J. Cochran; P. Davies, W. Davies, N. Trayfoot; R. Shepherd, E. Elias, J. Cutler, J. Powell-Jackson, A. Atkins.

HOCKEY

GUY'S HOSPITAL v. IMPERIAL COLLEGE

Away. 9th November, 1963

Result: drawn 5—5

As Imperial College had had a series of cup games during the preceding week, this match was played on their 2nd XI pitch, the first pitch being considered unsuitable.

Guy's soon showed their supremacy by being two goals up in a short time. The first from a deflected short corner by Winskill, the second from a well taken short corner by Loader.

By this time, the Hospital had accustomed themselves to the smaller pitch and the divots that lay scattered around, and were looking forward to a convincing victory.

The forwards were being most aggressive, notably the three insides, as they saw most of the game, and when they started a move one felt that they would score. Indeed they did, three more times, Appleby scoring twice and Bennett from an extraordinary one handed, one footed gracefully executed "sweep". But it was not the day for the Guy's defence. No sooner did the forwards score to put the Hospital in the lead, than the defence, through a combination of misunderstanding and mishitting, allowed Imperial College to score an equaliser.

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The situation proved to be most frustrating, the last six goals being scored alternately.

With the score at 5—5 the final whistle went, ending not a good game of hockey, but certainly an exciting one.

PAUL LIDDIARD

Team: A. Hirst; D. Loader, C. Brooks; J. Crafts, V. Harvey, P. Rushmer; A. Winskill, R. Carruthers, M. Appleby, P. Bennett, P. Liddiard.

GUY'S v. GRAVESEND

At H.O.P.

Result: 1—1

In near perfect conditions this game against the customary strong Gravesend side ended in a very creditable draw for the 1st XI.

Both sides settled down to play good, fast hockey and it was Guy's who scored first, when Bennett, taking a cross from the edge of the circle, neatly controlled the ball and picked his spot in the back of the net. Gravesend soon replied with an opportunist goal by their centre forward.

In the second half play became scrappy, mostly due to both sides trying to play faster than their real ability. This resulted in a series of sporadic raids by each side, thwarted only by two very sound defences.

It was good to see the defence back to their normal composure: the big weakness in the side at the moment is that too many passes are going to the opposition. Overall, a good performance for the team on the field, and a very enjoyable evening off it!

RICHARD CARRUTHERS.

Team: A. Hirst; D. Loader (Capt.), J. Sedgwick; J. Crafts, C. Brookes, V. Harvey; R. Carruthers, R. Strickland, M. Appleby, P. Bennett, P. Liddiard.

GUY'S v. KINGSTON GRAMMAR SCHOOL

At H.O.P. 2nd November, 1963.

Result: lost 1—2

PENTATHLON

GUY'S H. M.P.C. v. OXFORD U. M.P.A.

24th November, 1963.

Guy's continued to show improvement since the Cambridge match, defeating Oxford University in a triathlon of shooting, fencing and running. R. Thacker performed particularly well, winning both the shooting and running events outright. He was ably supported in the team by Wren and Webb.

Guy's 5365. Oxford U. M.P.A. 4845.

Scores (Guy's Team)—

1.	Thacker	2315
2.	Webb	1630
3.	Wren	1420

Also competed. Young and Faithful, as individuals.

MOTORING CLUB GYMKHANA

The Motoring Club Gymkhana—an event consisting of a number of handling tests—was held this year at Brentford Market on Sunday, 20th October.

An encouraging number of drivers—for the most part in life jackets—and brollied spectators arrived although Miss Box didn't. She said she "can't go backwards, even when it's dry".

Nine simple tests had been arranged, and in one of the first Elizabeth Baseden—defending her title of "Lady Driver Least Likely to Mow Down Marshall", reversed through the Garage wall with the aggressive determination of an East German Refugee.

Twenty-three drivers competed in four classes and a number of spectators witnessed four morning tests which involved garaging in forward and reverse, a figure of eight test, reversing around a pre-determined circuit and the time-honoured "wiggle-woggle".

The younger Prieskel dented a lamp-post but drove astonishingly well after merely one driving lesson.

After an adjournment for lunch at the City Barge, competitors assembled for the gate-post test, which required their driving between two boxes spaced a few inches wider than the car, at a minimum speed of thirty m.p.h. A few drivers were unable to reach this speed although the test was run downhill at Hughes request!

A surprising feature of the no-brakes test was that Prieskel's time was only the third fastest although this event was originally timed on his test performance. Nevertheless, he remained undeterred and carried on to win the small saloon class in a kindly but unenlightened Aunt's, Mini.

Heads were turned to the squeal of tyres as Merilyn Callieu carried out the regularity test with considerable confidence and even more speed (In somebody else's car!).

When the hour of reckoning arrived, prizes were awarded to Prieskel for a skilful performance in which he incurred just over fifty penalties, his nearest rival earning nearly three times as many, to Christine Jones who drove sedately in her early Austin Seven tourer to beat all male competitors in the Old Car class, and to Elizabeth Baseden in the Ladies Class and Miles, who beat Summerfield by one point in the class for Sports Cars.

This event proved to be one of the most popular of the year.

Results

Ladies

	Penalties
1st—Elizabeth Baseden. Mini.	(239)
2nd—Julie Summersfield. Sprite	(249)

Pre-War Models

	Penalties
1st—Christine Jones. Austin	(266)
2nd—Christopher Hughes. Morris	(267)

Small Saloon

	Penalties
1st—Harry Prieskel. Mini	(56)
2nd—Noel James. Mini	(147)

Sports

	Penalties
1st—Richard Miles. Triumph	(146)
2nd—Mark Summersfield. Sprite	(147)

MALCOLM BURKE

HOSPITAL INFORMATION

APPOINTMENTS VACANT

GUY'S HOSPITAL, S.E.1.

Two Resident Medical Officers (S.H.O. Grade) required for **Private Wards** (Nuffield House). Posts vacant 1st December, 1963, and 1st January, 1964, tenure 6 months. Application forms, from the Superintendent, should be returned immediately.

GUY'S HOSPITAL, S.E.1.

Guy's Hospital, S.E.1., requires **part-time audiometrician** to work 19 hours per week. Would suit ex-nurse living within reasonable distance of hospital. Previous experience not essential. Write immediately to Assistant to the Superintendent

HOUSE APPOINTMENTS

GUY'S HOSPITAL

December 1st, 1963

Assistant House Surgeons

To:
Mr. Lawrie — Mr. M. C. Pearson
Appointed for 6 months, the first 3 as A.H.S.

Mr. Glover — Mr. V. E. Egwuatu
Appointed for 6 months, the first 3 as A.H.S.

Mr. Brain — Mr. M. O. Rake
Appointed for 6 months, the first 3 as A.H.S.

Mr. Beard — Miss C. M. Britton
Appointed for 6 months, the first 3 as A.H.S.

Assistant House Physicians

To:
Dr. Mann, Dr. Scott and Dr. Bishop — Mr. J. M. Latham
Appointed for 6 months, the first 3 as A.H.P.

Dr. Hardwick, Dr. Trounce and Dr. Deuchar — Mr. D. K. C. Cooper
Appointed for 6 months, the first 3 as A.H.P.

Dr. Baker, Dr. Houston and Dr. Grimble — Mr. C. B. T. Adams
Appointed for 6 months, the first 3 as A.H.P.

Dr. Kauntze and Dr. Joiner — Mr. A. Thomas — 3 *months*
Professor Butterfield and Dr. MacLean — Mr. R. Kumar
Appointed for 6 months, the first 3 as A.H.P.

Casualty Officers

Mr. C. Chantler
Mr. C. N. Garstang
Mr. R. I. Kennedy
Mr. A. D. Milner
Mr. A. S. Russell
Mr. J. B. M. Shepherd
— 3 *months*

House Surgeons

To:
Mr. Eckhoff — Mr. B. S. Worthington — 6 *months*
Professor Atkins — Mr. J. A. Child — 3 *months*
Mr. Wass — Mrs. J. C. Gardner — 6 *months*
Mr. Blackburn — Mr. J. A. Clarke — 3 *months*

House Physicians

To:
Dr. Mann, Dr. Scott and Dr. Bishop — Mr. E. H. Harley — 6 *months*
Dr. Hardwick, Dr. Trounce and Dr. Deuchar — Mr. W. D. A. Foster — 6 *months*
Dr. Baker, Dr. Houston and Dr. Grimble — Mr. J. E. C. Hern — 3 *months*
Dr. Kauntze and Dr. Joiner — Mr. C. I. Roberts — 3 *months*
Professor Butterfield and Dr. MacLean — Mr. P. C. H. Newbold — 6 *months*

Resident Obstetricians

1. 7.63—31.12.63 — Mr. J. D. F. Bellamy
1. 9.63—29. 2.64 — Mr. J. V. Harvey Kemble
1.11.63—30. 4.64 — Mr. D. A. Rees
1. 1.64—30. 6.64 — Mr. G. R. Peachey

Throat and Ear House Surgeons

Mr. M. V. Smith — 3 *months*
Mr. G. Ebrahimzadeh — 6 *months*

Orthopaedic House Surgeons

Mr. M. E. Conybeare — 6 *months*
Mr. F. Navab — 6 *months*

Dermatological House Physician

1.11.63—30.4.64 — Mr. D. Denis-Smith

Neurological House Physician

Mr. M. D. O'Brien — 3 *months*

Genito-Urinary House Surgeon

Mr. N. J. Barwell — 6 *months*

House Surgeons to the Thoracic Unit

Mr. F. D. H. Birkett — 6 *months*
Mr. K. M. Pagliero (S.H.O.) — 6 *months*

Children's House Physicians

Mr. C. F. P. Wharton — 3 *months*
Miss A. Y. Coxon — 6 *months*

House Physicians in Clinical Pathology

Miss R. R. Millis (S.H.O.) — 6 *months*
Mr. M. Pazirandeh (S.H.O.) — 1.12.63—31.1.64
Miss H. Lachlan (S.H.O.) — 1. 2.64—31.8.64

House Physician to Dr. Bishop and Professor Butterfield and Dr. Wayte and Mr. McArthur

Mr. B. M. J. Wolfe — 3 *months*

R.M.O.s in Nuffield House

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1.12.63—31. 5.64 — Readvertised
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16. 9.63—29.2.64 — Miss A. Southern
1. 9.63—29.2.64 — Miss A. Tattersall (S.H.O.)
1. 9.63—29.2.64 — Mr. J. C. Simpson
1.12.63—31.5.64 — Miss P. H. Curry (S.H.O.)

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House Surgeon: Mr. V. Borirakchanyavat

LEWISHAM HOSPITAL

House Surgeon (General Duties) to Mr. Jemson: Mr M. G. Lim
House Physician to Dr. Roberts: Mr. D. R. Wilson

NEW CROSS HOSPITAL

House Physician: Mrs. A. Parker

ORPINGTON HOSPITAL

House Surgeon for General Surgery and Gynaecology:
Mr. S. M. Wood
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Readvertised

PEMBURY HOSPITAL

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BIRTHS

FAIRCLIFF.—To Jean (née Allwright, S.R.N., S.C.M.) and Malcolm Faircliff, a son, Paul Malcolm, on 29th August, 1963.

GREEN.—To Margaret (née Wicks, S.R.N.) and Roger Green, a son, on September 28th, 1963, at home

WHITE.—To Patricia (née Tobin) and John White, of Sandon, Herts, a son, Robert John, on August 28th.

ENGAGEMENTS

The engagement is announced between Dr. Robert Sells, son of the Reverend and Mrs. W. B. Sells, of Walton Rectory, Clevedon, Somerset, and Elizabeth Schryver, daughter of Mr. and Mrs. Peter Schryver, of Ash House, Headley, Surrey.

MARRIAGES

LLOYD—GREENWOOD.—On October 24th, at Epping, Vernon E. Lloyd, M.C., M.B., B.S., to Gladys M. Greenwood.

GUY'S HOSPITAL GAZETTE

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14th December 1963

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Editors *W. G. Reeves*
T. C. Davis

Sports Correspondent *E. Tiller*

Guy's Hospital, London

PASSIM

We would like to take this opportunity of wishing all who read the *Gazette* a happy and memorable Christmas. We appreciate that the *Gazette* often acts as a link with the past and the present for many people distributed throughout the world. Some will remember trundling out on the extern's bike or perhaps taking part in a Christmas Show, while others may recall the luxuriant decorations and stupefying repast. The general dissolution of red tape is usually maintained by bone-picking parties or those without excuse and Christmas is never really over until Matron's Ball and Sisters' Dinner are past. We believe that this one will be no exception and look forward to cultivating our own nostalgia.

We would also like to thank our printers—*The Kentish Times*—who have been printing the *Gazette* with great skill since last April. And even Christmas puzzles present their problems.

One of the erstwhile favourites of Christmas, particularly for patients in hospital, must be the Giles cartoon in that family newspaper. One can chuckle with Giles from the medical side while knowing that everything really is done to make a Christmas away from home happy and memorable. The clinical student can help in many ways, with the ward decorations, at dresser's teas and at the Christmas Day dinners, because for some patients it will be a trying time and the more a patient can feel within the community of a hospital the more easy it will be for him to accept such a time away from his family and friends.

Other students will have spent many deep, long nights tossing mail bags and counting parcels on one of the nearby railway stations. Some will be selling toys in the big stores, and some even working at Butlin's; all for those few precious notes to spend on presents, books and beer. Christmas seems to be a time when one throws aside caution and restraint and can accept enemies as friends. It is surprisingly easy to begin to feel how tired and wretched soldiers from opposing trenches ceased fire and talked and exchanged gifts in the battlefields of France during the First World War.

Pulse magazine has re-appeared and we welcome both it and the suggestion that the *Gazette* and *Pulse* could co-operate in organizing aid from within the hospital for the hungry and needy nations. A letter is published in this issue offering information about a Guy's contribution to U.N.I.C.E.F.: surely there is common ground on which all interested could combine to help?

GUY'S DIARY

DECEMBER

EXHIBITION. *Head Injuries.*

16th	M.	1.00	Dr. FORMAN. Clinical Lecture. *The Reaction of the Skin to some Metals—Part II.*
16th	M.	1.00	Mr. D. M. MacDONALD. Dental Clinical Lecture. Dental Theatre. *The Role of the Oral Surgeon in Acromegaly.*
19th	Th.	1.00	Mr. Murray FALCONER. Neurosurgical Round. Clinical Theatre.
31st	T.	1.00	Mr. ECKHOFF. Clinical Lecture.

NOTICES

Pupils' Physical Society
Beddard and Laidlaw Prizes

Two prizes are awarded annually by the Pupils' Physical Society—the Beddard Prize, worth £5, for presentation of a case-history, and the Laidlaw Prize, also of £5, for the best paper on any subject of medical or surgical interest. The prizes are awarded at a meeting in March when the papers are read. Last year's prize-winning papers are being published in the Guy's Hospital Reports.

Would anyone who is considering entering for these prizes, please notify the Secretary, Christina Lawrie or the President, Hugh Tunstall Pedoe, who will be pleased to give further details.

Guy's Hospital Photographic Society

At the colour competition held in the Clinical Theatre on Thursday, 28th November, a large number of good slides and prints were shown. There were 129 entries in all. This large number and some projector breakdowns caused the meeting to run late, and so the result could not be produced that evening.

The winner was Q. Jamil, who produced some very good slides of night scenes and of Pakistan. The whole audience scored each slide from 0 to 5 points, and the winning slide had an average score of 4.09 marks.

Miss M. J. Morgan was second with some attractive slides of North Africa, and scored 3.91 marks as an average. Mrs. S. Gordon deserves a very honourable mention in third place for some extremely good prints. The first prize was a voucher for 30s. worth of photographic goods, and the second for 25s. They were presented with the help and compliments of the newly-formed " Society for the Graphic Arts", with the invaluable assistance of its secretary, K. Balch, Esq.

Details of this Society will soon be available from the Secretary,

J. S. GREGSON,
Hon. Sec., Photographic Society.

Guy's Hospital Ladies' Association Flower Service

The Ladies' Association is most urgently in need of help in connection with the above Service. Would any lady who can spare one morning a fortnight (from 9.45 a.m. to about 12.15 p.m.) to arrange the patients' flowers in the wards, kindly contact Mrs. Cooper, 34, Shepherd's Hill, N.6 (MOU. 9070).

A PROGRAMME OF EVENTS OCCURRING IN THE HOSPITAL OVER CHRISTMAS AND THE NEW YEAR

Thursday, December 5th

7.15 p.m. Students' Carol Service in the Hospital Chapel.

Monday, December 16th

9.0 p.m. Free Church Communion in the Hospital Chapel.

Wednesday, December 18th

8.45 p.m. Service of Carols and Nine Lessons in the Hospital Chapel.

8.45 p.m. Carol Service in the Church of Our Lady of La Salette, Melior Street. Coffee will be served afterwards in the Upper Lounge of the Students' Club.

Thursday, December 19th

6—7.30 p.m. Carols by the Southwark Cathedral Choir.
Party A: Hunt's House, Nuffield House and York Clinic.
Party B: New Guy's House.

Friday, December 20th

6.30—8.0 p.m. Carols by members of the B.B.C. group of singers and their friends in New Guy's House and in Hunt's House.

Monday, December 23rd

3—6 p.m. Landon Fund Tea Party in the Charterhouse Girls' Club, Crosby Row, S.E.1 (*opposite the front door of Salomon's Centre*).

4.0 p.m. Dressers' Teas and ward decorations.

Tuesday, December 24th,
Christmas Eve

4.0 p.m. Dressers' Teas and ward decorations.
11.30 p.m. Midnight Eucharist in the Hospital Chapel.

Wednesday, December 25th,
Christmas Day

6—7 a.m. Nurses' Carols in the wards.
7 and 8.20 a.m. Holy Communion, Hospital Chapel.
7.30 to 8 a.m. Nurses' breakfast.
10.30—11 a.m. Morning Service, Hospital Chapel.
12 mid-day. Patients' Christmas Dinner.
12.30—1.30 p.m. Domestic Staff Dinner in Tabard House.
1.0 p.m. Nursing Staff Christmas Dinner in Wards.
3.30—4.30 p.m. Patients' and Staff tea in Wards.
7.40 p.m. Wards closed with prayers.
7.45 p.m. Nursing Staff to supper parties as advised, or to supper in the Nurses' Home.
Christmas Show in Physiology Theatre. All Staff and Students welcome. Time to be arranged.

Thursday, December 26th
Boxing Day

Christmas Show in Physiology Theatre.

Tuesday, January 7th

9 p.m.—1 a.m. Nursing Staff Dance in the Nurses' Home.

Wednesday, January 15th

7 p.m. for 7.30 p.m. Sisters' Dinner in the Nurses' Dining Room.

Lord Cunliffe *An Obituary*

By the death of Lord Cunliffe, Guy's has lost not only its Chairman, but also one of its best known, best loved personalities. Always accessible, known to all its staff, both professional and nursing, he spent an amount of time and energy in the service of the hospital which only those who have worked closely with him can fully know.

Educated at Eton and Trinity College, Cambridge, he served in the R.A.F. in both world wars, being a pilot in World War One. He became a Governor of the hospital in 1932, at the relatively early age of 33, and in 1935, when Lord Nuffield was Treasurer, he acted for him as Chairman of the Court of Committees. In 1946 he was officially appointed Treasurer and continued, as Chairman of the Board, on the introduction of the National Health Service.

Lord Cunliffe's contribution to the world of hospitals was by no means limited to Guy's, although Guy's was undoubtedly his greatest interest. In 1949 he was appointed to the General Council of the King Edward's Hospital Fund and served on its Management Committee and its Hospital Development Committee, and it was while he was Chairman of that body that the Hospital Centre was founded. The South-East Metropolitan Regional Hospital Board was yet another body to which he gave very great service, being appointed Chairman of the Board's Finance Committee at its first meeting a year before the inception of the National Health Service in 1948, and holding that appointment until his death; a period of 16 years of continuous and onerous work. In addition to this he was a member of the Seamen's Hospital Management Committee from 1948 onwards. The Teaching Hospitals Association was yet another body which owed much to him. He was a member from its inception in 1949 and Chairman for six years until 1961, and served on its General Purposes Committee from 1949 until his death. He was a member of the Central Health Services Council from 1956 to 1961 and was Chairman of its Committee on Hospital Laundry Arrangements, producing a report which has done a great deal in improving these very essential services.

As a man, Lord Cunliffe was a friendly, amusing and extremely modest person. He enjoyed a good story and could be as amused at a joke against himself as against anyone else. His chief hobbies were sailing, which he greatly enjoyed and of which he had many good stories, and the collection of Chinese ceramics and jade.

Surely there can have been few people who devoted their life so fully and so unselfishly to the service of others, and certainly few who have contributed so much to the hospital services of this country. He exemplified to the full the Guy's motto, "Dare quam accipere", and he is assured of a lasting place in the affectionate memory of all Guy's men and women. To his family we offer our most sincere sympathy, and the comfort, perhaps, of knowing that his was a life of dedication and of service to others.

Reflections of a Mental Hospital Chaplain

by DEREK R. BLOWS

Chaplain, Warlingham Park Hospital

It happened by accident. A series of unavoidable events, a large shove from my bishop, and I found myself walking reluctantly through the gates of the hospital to become its temporary chaplain. But only for one Sunday—I was quite adamant about that. After all, I was not specially trained, mental illness was not my line, and most of all I was afraid.

Now that that one Sunday has lengthened into over five years, I can look back and at the invitation of the editor, reflect publicly on the work of a mental hospital chaplain. To begin at the beginning; fear soon gave way to interest, and with interest came enjoyment. I suspect that most people who work in a mental hospital for more than a few weeks get bitten by something that makes them want to stay. I was well bitten.

The problem of ignorance, however, was harder to solve. In fact, I made a virtue out of necessity, loudly proclaimed my ignorance, and soon found that if you insist you know nothing everyone is happy to become your teacher and guide. I was lucky, too, with my teachers, the doctors and nursing staff of the hospital. Courses, conferences, and private study helped a great deal, but it was living and working in the situation and talking over cases with colleagues morning, noon and night, that was most valuable.

The question of training of clergy for work in hospitals, and especially in mental hospitals, is an important one. In America, it has become normal for young clergy and ordinands to spend some months as "interns", training in hospital under the direction of the chaplain. In this country we have only just begun to tackle the matter. One or two hospitals run short clinical training schemes. A group of psychiatrists and clergy based at Nottingham run an extensive scheme for training the clergy in the pastoral care of mentally sick people. But still there is no formal training required of a mental hospital chaplain, particularly in helping him to play his proper rôle in relation to other profesisonal workers. And the work of training doctors to understand and co-operate with clergy in pastoral care has not yet begun at all !

What, then, is the work of a mental hospital chaplain? He is first of all the parish priest of the hospital community. Like any parish priest he has a church and an office from which to work, and the wards, workshops and recreation rooms of the hospital are the equivalent of parochial streets. He meets rather more open eccentricity than is generally encountered in a parish, and certainly a greater level of tolerance, but he soon discovers that the people inside the hospital are much the same as the people outside. Indeed, the

distinction seems sometimes a very arbitary one. His concept of normality is enlarged to include almost anyone who can breathe.

There are however, certain special features that warrant closer examination. First of all the chaplain in hospital is not a lone wolf. He has not the advantage or disadvantage of being, as he may be in a parish, the only resident member of the community with time and inclination to help with people's problems of living. In a modern mental hospital, experts cluster round the patient like bees round a honey pot. The chaplain must work as a member of a team or not at all. This calls for some clarification of his rôle in the clinical situation.

It would be easy to make a sweeping simplification, and to say that as the physician is concerned with the patient's body, the psychiatrist with his mind, so the priest is concerned with his soul. But this is misleading as it implies that body, mind and soul are three separate entities that make up a person like a three-tiered cake. It is better to think of these concepts as representing three different aspects of the one person, in his physical life, his mental and emotional life and in his spiritual life. And the latter is not to be thought of as some isolated and rather curious quality of the religiously-minded, but as the total life of the person, his basic situation, his orientation, where he has come from and where he is going, his relationships with himself, with others and with God, his schemes of values, his powers of self-affirmation in the face of the universal problems of human existence that Tillich has defined as the problems of responsibility and guilt, of finitude and fear, and of purpose and despair. The chaplain's area of concern, therefore, is both greater and less than that of the doctor. It is greater in that the latter as doctor is concerned with parts of the person, the parts that have gone wrong, and it is less in that the chaplain is not concerned with the parts as such, but only with their place in the whole.

But to say this is again to over-simplify. For many doctors would say that they are concerned with the whole person. Many psychiatrists would say that they are concerned not just with specific disease entities, but with the total life situation of the patient. And the priest on the other hand would say that to be concerned with the whole must lead to a concern with the proper working of the parts. There must, in fact, be a considerable overlap between the various professions, particularly between the psychiatrist and the priest. For whether he likes it or not, the chaplain will have to meet people in the realm of their personal problems. The reason for this is that the roots of religious faith are deeply intwined with the roots of our emotional life. Our capacity for faith, our ability to respond to the images through which religious experience is offered to us (e.g., Father, King, Judge, Friend, Brother) is grounded in our earliest experience of relationships with people. We have to face the fact that religion can sometimes be simply an expression of neurosis, and that Freud's description of religion as projection is by no means always wrong. Our religion may be impeccably orthodox intellectually, but emotionally wildly heretical. For instance, while subscribing to the religion

of the New Testament, a man may still feel of God as being an angry old man with a big stick who has to be placated at all costs, or perhaps as a celestial Father Christmas who gives us what we want providing we perform the religious equivalent of putting our requests on paper and sending them up the chimney. Fanatical attachment to principle can be simply a barrier to enable us to hide from our own doubts. Rigid perfectionism can be a defence against our inner despair. Self-hatred and renunciation can conceal a deep guilt about being human. Compulsive virtue can be as neurotic as compulsive vice, and sometimes almost as anti-social.

Now it is often much easier to talk about God and the finer points of theology than about one's own deepest feelings of anger, lust, fear and despair. The first need of the patient, however, is often to sort out his emotional problems so that he can see more clearly and objectively. The psychatrist's special concern is with this sorting out, the priest's with the subsequent seeing. In practice, however, the priest will often find himself discussing emotional problems and their implications for religion with the patient, while the psychiatrist will sometimes find himself discussing religion and its emotional implications. And when it comes to shedding a false neurotic religion, the priest may be a less threatening figure to help the religiously-minded patient in the first instance, for it is a fairly well-established notion in popular mythology that most psychiatrists are hostile to religion anyway. A notion in my experience, far from the truth.

It seems clear that too sharp a demarcation of territory between priest and psychiatrist will serve only to allay the anxieties and mistrust that the one may feel about the other, and will not necessarily be of service to the patient. What the Americans describe as "fluid rôle team work" requires a great deal of mutual trust between members of the team, which cannot be organised by simple administrative fiat.

At the risk of further over-simplication it may be possible to clarify the rôles of chaplain and doctor by looking at them briefly in terms of responsibility, technique and resources. Naturally, the doctor carries the responsibility for the treatment of the patient. The chaplain shares in this work only as an auxiliary. His concern includes this but goes beyond it. His techniques, apart from specifically ministerial functions, will include listening, dialogue with individuals and with groups, and some of the skills of psychotherapy to enable him to meet people "in depths" at the point of their need. At the same time he will be aware that his symbolic rôle as a priest will load the encounter and prevent him from assuming the mantle of psychotherapist or analyst even if he should wish to do so. His resources will not, of course, be those of physical treatment but of personal relationship and friendship, and the Gospel itself, with its gifts of love, joy and peace through the ministry of Word and Sacraments, whether in church or outside. He will seek to bring these resources to meet the needs of the patient as the patient himself becomes aware of his real, as opposed to neurotic, needs, through discussion of his problems with the doctor and perhaps with the chaplain.

There are, of course, many patients for whom growth in insight, with all its attendant pains and anxieties, is scarcely possible. The chaplain will seek to help and support them too, both by his friendly acceptance of them and by the normal ministrations of the church. In the case of the former, it is worth remembering that the priest has a symbolic rôle in hospital, as representative of the caring community outside the Church, and indeed of the God who cares, standing alongside the patient as he suffers and seeks to cope with his illness. For some, it is true, this symbolism will be negative, and the priest will stand for dark, threatening things like the policeman who approaches you just when you have parked your car. These folk will need a lot of non-symbolic, simple human help before the chaplain can make any relationship with them. Fortunately there are many other workers in hospital to try to do this. Others, in whom the wells of religious experience have not been poisoned, will find just the presence of the chaplain helpful. One of the first lessons I learnt in hospital was from the friendly consultant who told me (rather ambiguously I felt afterwards): "Far more important than anything you will say is simply the fact that you are here."

The services in the hospital chapel deserve separate study, particularly in relation to the needs of chronic patients of a mental hospital. I must content myself with certain general principles. There are certain features of the English tradition, and I do not just mean Anglican, though I speak as one, which are singularly unhelpful for the chronic mentally sick. Communication at a single verbal level, prayers, sermons, hymns and so on, is inappropriate for people for whom language is a limited form of communication. There is a great need for visual aids, not only for pictures, banners, film strips, but for participation through seeing something happening as well as hearing about it. Again there is traditionally a great emphasis on feeling in English worship. To experience some inner warmth of feeling is regarded by many as the test of valid or useful worship. But the mentally sick are often sick in their feelings and incapable of this sort of response. In fact, Jesus said, "Do this", not "Feel this", in connection with the chief act of Christian Worship, the Eucharist. Worship should be seen primarily as an action with the emphasis on doing rather than on feeling. And if an action then it must be expressed in actions, movements, gestures, though of course these will aim at being meaningful to more than just the ecclesiastical antiquarian. Again, the popular English tradition of worship allows the congregation only a passive rôle. The clergy conduct it for, on behalf of or even instead of the people who are reduced to the status of passive recipients or spectators. But the mentally sick need to be drawn out of their isolation and passivity and involved in a corporate activity.

To meet these needs, we have experimented over the last five years in our hospital chapel. Starting with group activities such as pageants that help accustom patients to come out of their pews, express themselves in movement as well as speech, we have developed a liturgy which, while not perfect, does to some extent succeed in

involving a lot of people and not just the chaplain, that expresses itself in meaningful actions and not in hopeless exhortations to feeling, that involves seeing as well as hearing. But if you want to know more about that, I suggest you come along one Sunday morning and find out for yourself.

Finally, the chaplain has a rôle to play when the patient leaves hospital. Loneliness, isolation, these are great perils and a powerful source of relapses. When appropriate and possible, the chaplain will endeavour to link the out-going patient with the parish community at home, and also to help the parochial clergy to understand and care for them.

These reflections are of necessity incomplete and somewhat inadequate, but if they help people to understand better the rôle of the chaplain in a mental hospital, their purpose will be well served.

PUPILS PHYSICAL SOCIETY

Symposium on Auto-Immune Disease

Combined meeting with the St. Bartholomew's Hospital Abernethian Society on Thursday, 28th November, 1963.

Most patients currently in the wards of a teaching hospital, suffer from diseases which are of partially or completely unknown aetiology. It is true that we have some understanding of the pathogenesis of groups of such diseases, the neoplastic and genetic disorders and atherosclerosis, for example, yet for others we lack even this meagre enlightenment.

So it is that in all considerations of possible auto-immune mechanisms we are presented with a paradox not unusual in scientific endeavour, that the preliminary experiments have not put an attractive hypothesis properly to the test, and the interpretation of results is raising more questions than the experiments have answered.

The speakers at this Symposium recently arranged by the Abernethian Society of St. Bartholomew's Hospital, to which members of the Physical Society were invited, made their audience very aware of this paradox, presenting the results of much interesting experimental work, and only offering such modest interpretations that the limits imposed by our fragmentary knowledge were never exceeded. Dr. Loewi began with a series of slides showing the macroscopical and microscopical pathology of rheumatoid arthritis, arguing only that the pictures were suggestive of an immune mechanism being involved in this disease process. Dr. Holborow from the Rheumatism Research Unit at Taplow continued by presenting evidence that antibodies against normal iso-antigens existed in the blood of patients suffering from systemic lupus erythematosus. Finally, Dr. Deborah Doinach from the Middlesex Hospital, presented results demonstrating not only that circulating antibodes occurred in Hashimoto's disease and pernicious anaemia, directed against components of thyroid epithelium and gastric parietal cells respectively, but that they could also be shown to combine specifically with the tissue cells in question. Her pictures obtained using fluorescent anti-globulin antibodies were the highlight of the evening.

Our most sincere thanks are due to the speakers and to the organisers of the symposium, and to the St. Bartholomew's Hospital Abernethian Society for their much appreciated invitation. If future symposia of this calibre are planned at this hospital or as a combined venture with others, they can be assured of the wholehearted support of your reviewer.

A. J. KNELL.

My Derby Day, 1906

by W. M. MOLLISON

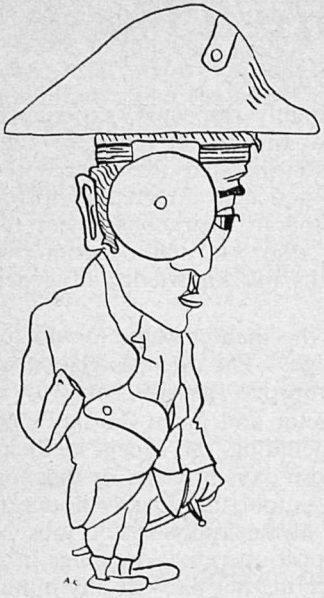
In Woolwich there practised two highly respected, experienced, hard-working G.P.'s who were always at the call of patients. They also had beds in the local hospital and operated there, except on Derby Day, when they deserted their practice to attend that historic race meeting with their wives. As a sop to their consciences they arranged with Guy's to send a locum who, on that occasion, was myself: having been H.S. for six months my knowledge of general medicine was scanty to put it mildly.

Dressed in frock coat and silk hat, the then costume for doctors, I took an early train from London Bridge. The doctor's groom met me with the dog-cart. Rain did not improve the silk hat.

On arrival I was greeted by the doctor and given the day's programme and shown the dispensary, including the stock medicines coloured according to their uses. In those days diseases or diagnoses were fewer and medicines simpler. I was told the surgery hours, the attendance at the local "works" where those applying for jobs had to be passed, a sketchy account of the post-operative dressings in the hospital and lastly that Mrs. X was expecting her baby at any minute. With this they departed, saying they would be back about 9 p.m. I expect the late hour was due to a prospective celebration to be paid for by their winnings.

On arrival at the "works" I was faced by seven applicants. No doubt the usual doctor would have passed them all in 15 minutes; but not an inexperienced young man. When asked to undress, the candidates did so but were obviously astonished. Heart, lungs, abdomen (? for hernia), urine, and eventually all were passed as fit. All these examinations took time, not to mention putting on their clothes again. A well-known and greatly respected consulting physician took an hour to find any patient fit; I wasn't so thorough. As I was getting ready to go to the hospital a request came from the Director of the "works" inviting me to a glass of sherry and a biscuit—this took at least half-an-hour—rather frustrating. The dressings took quite a time and on returning to the surgery at about 2 p.m., I hoped for lunch, but found an urgent message from a mother saying the baby had brought up blood. This sounded exciting and I hastily tried to think of the causes of this alarming symptom. However, on finding the child sleeping peacefully and looking normal, my fears were allayed and the vomit showed only one small spot of blood. I reassured the mother and hoped I had not missed something serious, and returned to lunch about 3 p.m.

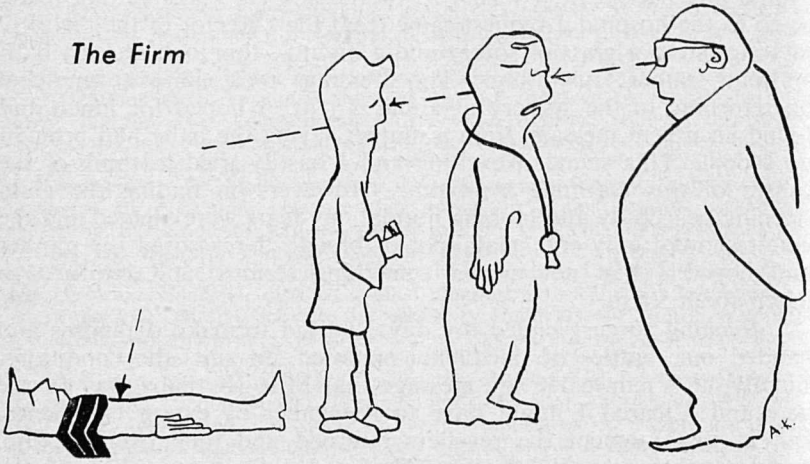
Evening surgery ended my day. I tried to make diagnoses and handed out bottles of medicine coloured to suit the conditions. Finally, at 9 p.m. came the message that Mrs. X's baby was on the way and I feared I might have to remember by extern experience. But at that moment the revellers returned and took over the job, and I caught a late train back to Guy's. I never heard who won the Derby!



There's certainly nothing wrong with you madam

O.K.— So I'm a Messy Eater

The Firm



A Christmas Quiz

1. *What* was the mediaeval palace of the bishops of Winchester converted into before its structure was burned down in 1814?

2. *Who said*: "Acute diseases come to a crisis in fourteen days?"

3. *What is the approximate total maintenance cost* of Guy's Hospital per year?

4. *What is the average cost* of each in-patient per week?

5. *What is the average cost* per each outpatient attendance?

6. *Which of the following Societies* have recently held meetings at Guy's?
   (a) Human Chromosome Club.
   (b) Acid Fast Club.
   (c) Antibody Club.
   (d) Anti-Vivisection Guerillas.
   (e) Biological Engineering Society.
   (f) Tools of Biology.

7. *When* was the *Gazette* first established?

8. *What* is a Lepidosiren?

9. *Who recently discovered* a "bean-stalk drug that makes pint-size boys grow taller?"

10. *Who found* 73 *homeless boys* sheltering amongst empty boxes and tarpaulins in Billingsgate market?

11. (a) *Who* was responsible for bringing the Italian Renaissance style of architecture to this country?

    (b) *Who* later modified it to suit English ways, materials and craftsmen?

12. *When the College caught fire* during an incendiary raid in 1940, what were the first articles to be salvaged?

13. *Which* are the three oldest Sports Clubs at Guy's?

14. *What percentage of* (a) Dental Students, and (b) Medical Students, at Guy's, are female at the present time?

15. *To what* did the following give their names?
   (a) Spigelius.
   (b) Shenton.
   (c) Hilton.
   (d) Meckel.
   (e) Mahomed.

16. *Which of the above* were Guy's men?

17. *Who wrote* "On the Syphilitic Affections of Internal Organs" and received an F.R.S. as a result?

18. *What* is an Italian style rig?

19. *What* do the following three people have in common?
   (a) Dr. Boland.
   (b) General de Gaulle.
   (c) Clare Hollingworth.

20. *When is the new Students' Hostel coming into use*?

(ANSWERS will be found on page 644).

FOR THE VERY YOUNG

START	2	3	4 ? *DEAN*	5 ADVANCE TWO	6
24 GO BACK TWO	23	22	21	20	19 ADVANCE THREE
25	26 ADVANCE TWO	27	28	29	30 GO BACK THREE
48	47	46	45	44 GO BACK THREE	43 **BOW** *RETURN*
49 GO BACK FOUR	50	51 ADVANCE THREE	52	53	54
72	71 GO BACK ONE	70	69	68 ADVANCE TWO	67
73 ADVANCE TWO	74	75	76 ? *DEAN*	77	78 GO BACK SIX

One will require for this game some counters, dice and a thick skin. A large number of people may play this game at the same time; certainly hundreds. Starting from the top left-hand corner, your career will slowly unfold before your eyes. Reasons for any sudden change in success will be found below, listed according to the number of the square at which the particular event occurred.

4, **9**, **76** and **81**: You have been called for an interview with the Dean. Throw again. Now move a number of squares equal to your score as follows: 4 and 5 towards Start, 6 towards Finish and 1, 2 and 3 vertically up or down as may be possible. **5**: Brought own frog to physiology practical. **8**: Assassinated " my old cat". **12**: Recognised professorial description of gibbon masticating, during viva. **13**: Persistent smoker in physiology practicals. **15**: Swallowed *i.e.* swallowed Ryle's tube during crucial experiment. **17**: Joined Christian Union. **19**: Wore constant smile of edification. **24**: Sat on Registrars' table in Spit. **26**: Met consultant at Old Boys' reunion. **30**: Caught developing in Nurses' dark-room after hours. **33**: Entered Sophie's Hostel.

or How To Be Topp

7	8 GO BACK TWO	9 ? DEAN	10	11	12 ADVANCE TWO
18	17 ADVANCE SIX	16	15 MISS A GO	14	13 GO BACK THREE
31	32	33 GO BACK FOUR	34	35	36
42 **STREET** *TO START*	41	40	39	38	37 ADVANCE FOUR
55 MISS A GO	56	57	58	59 ADVANCE THREE	60
66	65 GO BACK THREE	64	63 ADVANCE THREE	62	61 GO BACK SIX
79	80	81 ? DEAN	82 GO BACK FIVE	83	**FINISH**

37: Trapped in Hospital lift with favourite consultant. **42** and **43**: Apprehended in possession of one red Ministry of Works hurricane lamp. **44**: Fell asleep on ward-round. **49**: Did not wake up on direct questioning. **51**: Wore Royal mauve shirt with green carnation. **55**: Entered Addison before 10 a.m. **59**: Became shining light of Pupils' Physical Society. **61**: Wrote letter to *Gazette* criticising some aspect of Hospital administration. **63**: Had tea in Sister's office. **65**: Sang doubtful song at Xmas show. **68**: Gauleiter x3. **71**: Described a lump as "firm" when a senior dresser. **73**: Still wore constant smile of edification. **78**: Met consultant at Kempton Park when both should have been at Out-patients. **82**: Got married before qualifying and unfortunately wanted to be a surgeon. FINISH: You have now reached the doubtful heights of the Medical profession. Are you prepared to send your son (or daughter) on a similar goose chase?

Any similarity which may be apparent between the above and the careers of certain readers is wholly coincidental and not very surprising.

William Trickey's
YULETIDE JOTTINGS

The immaculate and elegant figure of Dr. K**ntz* was looking a little dishevelled today when I called in to one of his wards to watch him putting the finishing touches to his Christmas decorations. His theme was "Hearts of Gold", and he grinned impishly when he commented, "the heart does sterling work". This was my introduction to a hospital at Christmas time; the trim Florence Nightingales showed no signs of overwork and Sister W*lk*r told me how difficult it was to find enough to occupy their young minds and bodies. There were Christmas trees, presents, goodwill and cheer, decorations and nearly enough patients to enjoy them. The well-known friend of children, Dr. M*ck**th, was sipping his orange squash in a patient's cot crying to S*st*r Cr*mp, "We're all God's children". There is no truth in the rumour that the Athenaeum is installing similar cots in sympathy. Not far away the many workmen were toiling to keep the paths swept and the doorways clear for the Christmas Day visits of all the consultants. "It's all go this year, mate," one told me and shambled off into the island of his deafness. For readers not acquainted with Guy's you ought really to know that John Keats, the poet, and C. S. Forester, the novelist, were both students here and one can echo the poet's words that the season is truly one of "mellow fruitfulness". However, it is more than that!

After staggering through dimly lit Yuletide passages one can hop on a lift and be taken way up into the surgical wards, where the surgeons will be seen carving the turkeys, the sisters eating them and the students picking the bones with the junior nurses later—that is if the Matron will allow it. Anyway, hospitals are known for good, clean fun and the cleaner the fun the gooder it won't be. Miss J*hns*n informed me that "all our young gels will be under Mother Mary's wing and I'm determined that Tom Guy won't get all his own way this year."

There is sure to be much fun and jollity this year at Guy's, and one old consultant told me that I ought to try the hospital port, as it reminded him of that which used to be served at the Junior Carlton Club. Anyway, cheers! And thank you, Doc.

OBITER DICTA

S*r R*ss*l Br*ck:
"I hadn't got the heart . . . ."

Dr. Tr**nc*:
"Could anyone lend me a stethoscope; we didn't use them very much in the Department of Experimental Medicine".

Dr. Sc*tt:
*"I like it when Dr. M*cl**n goes away on holiday because I learn at least five new side-effects of steroids".*

CRITICISM

by STEWART CAMERON

The Strong are Lonely

Guy's Hospital Theatre Club Production—December 1963

The Theatre Club has scored another success in providing an entertaining and thoughtful evening from Fritz Hochwaelder's play, " The Strong are Lonely". The standard by which their production should be judged is that of the professional theatre ; and if the criticisms in the following review seem unduly severe, it is because the club has established its right to be criticised only in relation to the highest standards.

The play chosen for this Autumn's production is a difficult one, with an all-male cast of seventeen. This in itself would be more than most amateur groups could manage. Although presenting some fine theatrical opportunities, the play (as translated) has many faults. The language is wooden and portentious in many places—an example is the translation of the play's title, " Das Heilige Experiment" as "The Strong are Lonely". In the theatre of 1963 the play's construction seems a little dated; the theatrical devices used to set and explain the plot are often clumsy and over-literal, so that the actors relate what is happening rather than being forced to illustrate and act out the development. The first act is slow, and presents a considerable challenge to cast and producer in maintaining the audience's interest.

The Trial

We remember Brendan Hicks' effective use of a large cast when he directed " Harlequinade " two years ago, and he can feel satisfied that he has realised the greater part of the play's potential. The second act, and particularly the final scene, were well realised, and generally speaking he used the actors to the limit of their abilities. The faults in detail, however, were very numerous. For example, in a play seen in a small theatre, in which a great deal of writing takes place on stage, it is essential that the audience should believe in the reality of the act. A flowmaster pen is not enough. An accumulation of such small details help enormously to intensify atmosphere. A more general criticism is that of the handling of the whole first act. I have mentioned above the difficulties it presents; the style adopted was one

of long, raking exchanges between the two main characters placed on either side of the stage. This has the advantage of emphasising the intellectual argument of the play, and works well in the second act where the intensity of dramatic action is greater. In the first act, however, this approach lowers the temperature of the play. No sense of the intimacy of the two protagonists was established ; they never approached physically close to one another ; this was a dramatic dialogue, not a play. The impact of the first act, also, was lowered by the handling of Miura, which is discussed below.

On the stage side of the production, the simple set of Teresa Ivanans was effective, but proved cramping when more than a few characters were on stage because of the difference in levels of the stage floor. Moves stage left were difficult, and therefore awkward, round the table. The lighting pleasantly varied the simplicity of the set. Two particularly good points were the burnished head of Father Fernandez when he stood by window or door; and the final death scene.

Father Fernandez

The costumes were good, but again a few irritating details detracted from the total effect. Modern shoes just will not do, and socks show clearly through tights. The Indian costumes were not successful, but this did not detract alone from their appearance. Their make-up was totally wrong, and this was generally the worst feature of the play. Only John Storrs, as Captain Verrano, did not look from the audience as though obviously about to step on stage. The cast presented various unlikely tints ranging from russet to corpse. Eyes were either ignored or badly done. Miura's shaven sideburns and neck were left untouched.

The acting was generally of good standard, but the inexperience of many of the actors showed through. It should be pointed out that for the majority of players this was their first performance. Many are new to Guy's, and their ability makes the future outlook for the Theatre Club bright. The play turns upon the relationship between the practical cynicism of Don Pedro de Miura and the practical idealism of the Father; neither are sure that his course has been the right one. To the rôle of the Father, John Froude brought considerable authority. The play text calls for a man of fifty, wise, ascetic, and authoritative—clearly a difficult rôle for any young actor. Wisely, I think, neither actor nor producer tried to lend age to the character. Their Father Fernandez is a man of vigour in his prime, youthful and strong yet gentle and restrained. The element of restraint was particularly emphasised to begin with, and the range of expression steadily widened so that the emotional intensity of the final scene made it a moving exhibition. The fault with this approach was that again it left the opening scenes flat.

The conflict that the Father suffered was well brought out, but the play was weakened by the production of Miura in such an even fashion from the beginning of the play to the death of the Father. Miura is no less concerned

about his actions, as the final line of the play emphasises, yet the audience could feel little of all this. Miura is a complex character, and one in many ways even more difficult to convey than the Father. Nicolas Flower gave authority to the rôle, but I think was helped neither by the particular way his character was produced, nor by his make-up. His Miura executed his duties with a brisk relish, and without the doubts the text indicates disturb him. Because of this, much of the impact of the first act is lost. In an attempt to make these scenes more brisk, the exchanges were speeded up and even more of the relationship lost. The result was a lessening of tension even where the pace was brisk.

Of the supporting characters, a number of performances remain in the memory. Peter Dunstan's Cornelis, who delivered every one of his lines with excellent timing and maximum effect; Alan Stanhope's Oros, steady and strong, the conflict of motive above him; and Edward Humphrey's ingratiating Spanish merchant.

To all the cast, stage staff, front of house staff and other helpers must go thanks for an enjoyable evening. On the Wednesday, when I attended, not such good marks to the audience who arrived late and were, throughout the play, less responsive than the performance deserved. Has theatre-going become such a rare pastime that, even in London, the audience no longer realise **they** have a rôle in the play? It is this which makes an ounce of live theatre worth a pound of television drama, and this is the reason why Guy's needs its own amateur drama in the midst of the greatest concentration of professional theatre in the world. A group of people collect to make a play for another group; one of the oldest activities of men, and one of the most exacting and satisfying.

A final point—one that is only too familiar. When, oh when is the enthusiasm and hard work of the club to be matched by even the most meagre of permanent stage facilities? If all the energies used at present in building the stage could be devoted to the actual performance, Guy's would have a theatre indeed.

(Photographs by Guy's Hospital Photographic Society).

We will be publishing a review of the Music Club's performance of *The Messiah* in this column in our next issue.

NOTICE

Guy's Hospital Clubs' Union Ball

The Rose Ball will be held on Thursday, 6th February, at the Savoy Hotel. Music will be provided by Laurie Payne and his Ballroom Orchestra and by the Barbados Tropicana Steel Band. There will also be a Cabaret by West End artistes. Further details will be published nearer the date.

Q. JAMIL, *Hon. Ball Secretary.*

CORRESPONDENCE

U.N.I.C.E.F.

SIR, Some months ago, a number of members of the staff decided to start a project in which Guy's as a community would provide regular assistance to developing countries in the form of contributions to the United Nations Children's Fund (U.N.I.C.E.F.). As most people are aware, this organisation works with Governments to provide education, equipment and materials required to raise the level of nutrition in the country concerned. The scheme to which our contributions are directed is in the Uttar Pradesh province in India.

So far the number of people in Guy's asked to take part is small, but already the sum of £109 16s. 7d. has been collected. This is made up of weekly, quarterly and annual subscriptions, and it is hoped to send another donation in the quarter beginning January, 1964. In addition to this amount there is £8 0s. 6d., the proceeds of a combined party run by the Church of England and Catholic Societies. There are many at Guy's who have not yet been told of this project and who may be stimulated by the initial success to want to take part. If this is so, I shall be glad to provide further information.

Yours, etc.

D. J. ANDERSON.

Physiology Department,
Guy's Hospital.

Sir William Kelsey Fry

SIR, May I, as one of his former House Surgeons at Guy's, add a tribute to the memory of Sir William Kelsey Fry.

As a teacher he was at his best with a small group or in his clinic when his essentially practical and clear cut approach to clinical problems could be given forceful expression. Who can forget his axioms for successful oral surgery "access" and "force under control"?

As a student, "Kelsey" had been a fine athlete, winning the Inter-hospitals, "Kent Hughes" cross-country race for Guy's on two occasions, and several races over one and three miles on the track in the University and Hospital Championships. To his work he brought the endurance and perseverance that had made him an outstanding athlete.

He was always indefatigable with any obscure or difficult case that presented in the wards. I can remember one such case—an osteomyelitis of the mandible which kept both of us late in the wards on many evenings. He consulted tirelessly with everyone in every department of the hospital who could help in the diagnosis, and when at last the problem was solved and successful treatment instituted, he said to me: "There is no such thing as time in medicine". A lesson in dedication to one's patients that is not easily forgotten.

A constant theme in his teaching was that dentistry is an integral part of medicine; that the Dentist must equip himself to view the patient from the wider medical background. This view or philosophy which coloured not only his clinical but his teaching and administrative work he developed and fully expressed in an address on receiving an honorary degree at McGill University.

It necessarily broadened the whole conception of the dental profession to dentistry.

There can be few Guy's men who came in contact with him who do not remember with gratitude and affection the man, who with wry humour, taught us so much.

Yours, etc.,

D. J. LYON.

12, Oxford Street,
Nottingham.

South Africa

SIR, One of the disadvantages of living so far away is that the *Gazette* gets a bit out of date, and all correspondence on this subject may well be over.

However, I do hope that you will get someone with knowledge to give the other side of the picture. Most Europeans who have spent any time in Africa will admit that apartheid is the answer in South Africa, though they may not agree with the extreme measures the Government there is taking. But let us not forget that almost the first thing that these newly independent countries do is to bring in legislation giving them exactly the same power of repression as that which they condemn in South Africa. We have it here, and if I dared to criticise the Government, I would almost certainly go inside for an unspecified time and without trial. You will have noticed that Nkruma in Ghana has just stepped the time limit up to ten years instead of five!

If the Quodlibet Society only knew the extent and scope of legislation directed against the liberty of the subject, freedom of the Press and even Trade Unions in many of the " emergent " African States it would be horrified.

Yours, etc.,

KEITH DUFF.

P.O. Box 7,
Pangani,
Tanganyika.

SIR, It was encouraging to read Mr. Hilton's letter and your remarks in the issue of October 19th and to hear that some effort is being made to correct the biased and false opinions expressed about South Africa in the *Gazette* of October 5th.

Guy's has a long and pleasant association with that wonderful country which for many years has carried out the Guy's motto—as well as—if not better than any other country on this continent.

The article must have deeply hurt a great number of Guy's men in the Republic of South Africa, and that surely is the antithesis of the aim of our hospital.

Yours, etc.,

FISHER ROBSON.

324, Robinson House,
Union Avenue,
Salisbury, S.R.

Bermondsey and Southwark

SIR, May I correct a statement which was made in Mr. Davis's most interesting History of Bermondsey and Southwark?

Thomas Guy died on the 27th December, 1724. At that time the reformed Gregorian calendar had not been adopted in England, and the new year was reckoned as beginning on Lady Day. January, 1724, therefore, followed immediately upon December, 1724. The first admission of patients to the Hospital took place on the 6th January, 1725, but in our present day calendar this would be 6th January, 1726. There was, therefore, more than a year between Guy's death and the admission of the first patient to his Hospital.

Yours, etc.,

A. H. BURFOOT,
Clerk to the Governors.

Counting House,
Guy's Hospital.

REVIEWS

CLINICAL MEDICINE; *The Modern Approach.*

by A. E. Clark-Kennedy and C. W. Bartley. Pitman. 1962. Pp. 425. *Price* 12s. 6d.

The student approaching his introductory clinical course from the lecture theatres and laboratories of his pre-clinical years has varied ideas on the substance of clinical medicine. He knows that he will deal with multiple diseases and pathologies, and that these will present in patients seeking to be cured. He expects to learn about treatment. The quantity of material appears to most, at first, to be overwhelming and armed with only his basic instruction in history-taking and physical examination he finds himself quickly entering the initial stages of a long period of systematic learning and accumulation of experience. Perspectives in medicine are acquired slowly, and the unitiated clinician desperately requires guidance in thinking.

This book primarily fills the needs of the new clinical student. The book is not a textbook and avoids excessive headings and detail. It introduces the reader in general terms to the nature of disease processes. It clearly differentiates between primary functional disorders and organic diseases and discusses the aetiological factors and the presentation of the commoner conditions of both groups. In a chapter on clinical diagnosis the book considers the elicitation of histories and the significance of symptoms and the more frequently observed physical signs. The book is completed by a discussion on the principles of prevention and treatment. It is a surprisingly inexpensive volume to be read at a few sittings. The author's simple style makes this an easy task.

For students at later stages in their careers, the book has a limited role. It does not provide sufficient information for examination purposes. But, if read at leisure, it will challenge and stimulate one's clinical outlook.

IAN BAKER.

AN INTRODUCTION TO HUMAN PHYSIOLOGY.

by J. H. Green. Oxford University Press. 1963. Pp. 144. *Price* 21*s*.

All too often when one starts to study a new subject, its immensity and complexity tend to be overwhelming—it is impossible to see the wood for the trees. This is particularly true of physiology which seems to be a number of apparently unrelated systems vaguely connected with biochemistry. This book, reasonably priced in paper covers, sets out to explain the basic principles of physiology briefly and concisely, aided by excellent diagrams. The clarity is remarkable considering the complexity of the subject. As the title suggests, the book is only intended to be an introduction, and when the basic principles have been mastered, then recourse to a larger textbook can be made, but for someone beginning the study of physiology, this book will prove extremely useful.

MARTIN WASTIE.

A PRIMER OF MEDICINE,

by M. H. Papworth. Butterworths. Second Edition. Pp. 292. *Price* 32s. 6d.

It is vitally important for any student beginning the study of his subject, to have a firm foundation of basic knowledge upon which to build further information and more complete understanding of that subject. This is especially important to the student of medicine because the medical course tends to be somewhat disjointed and disorganised owing to the wide field to be covered and the increasing specialisation of those responsible for teaching. This book attempts to do just this and in the author's words, it is a work of " essential knowledge " giving this essential knowledge in all the major branches of medicine—neurology, alimentary, respiratory and cardiovascular disease, with chapters on swellings and the diagnosis of obscure pyrexias thrown in, almost as an afterthought at the end. There is a strongly clinical bias emphasising the importance of good history-taking and physical signs in a very dogmatic manner which is probably unavoidable in a book of this type. There is unfortunately a rather irritating introduction consisting mainly of an attack on discussion and

enquiry by students into the realm of theory and hypothesis; it is this attitude which only acknowledges cast iron facts that hampers the progress of medicine, and indeed has frequently done so in the past. However, this should not detract from the value of this book which is considerable, not only to those in their preclinical appointment, but also to those wishing to brush up on their essential knowledge before examinations.

MICHAEL MAISEY.

SURVEY OF CLINICAL PEDIATRICS.

by Slobody and Wasserman. McGraw-Hill. 4th Edition. Pp. 541. *Price* 89*s*.

This is the fourth edition of a book which does not claim " to replace the excellent large text-books', but is " designed to help the student and practitioner focus on the highlights and relationships of pediatrics". In the main it succeeds.

It is shortly written, with clear headings in heavy type, and tabulation of facts in concise form. Discussion and background are minimal, the authors presumably assuming that this has been obtained from the larger text-books; neither is there much discourse about subjects which are covered in topics of general medicine or surgery. Most conditions are included in the book, which has a good reference index. The appendix has a thorough list of points of history and features of clinical examination which can profitably be sought for in infants and children. For those so inclined, at the end of each chapter is a series of multiple-choice questions, which are closely tailored to the text.

The impression received is that the highlights are rightly stressed, but that the relationships are not so overtly presented. Many, of course, are self-evident, and the reader will be aware of many others without requiring that they be pointed out. For all students and practitioners outside paediatrics, the book can be recommended. With some previous knowledge of paediatrics as background, the book is very useful, because factual aspects and features of importance in a wide range of diseases can quickly and easily be found.

GARRY G. HAMBLETON.

GUIDE TO PSYCHIATRY.

by Myre Sim. Livingstone. 1963. Pp. 868. *Price* 55s.

This book, the author implies in his preface, is aimed to fall between the small text-book for the medical student and the large volume for the would-be specialist. With its 800 pages and 1,200 references, it would certainly not, for most of us, fall into the former category, but it can be recommended for those who would explore the field of psychiatry more thoroughly. In the substantial chapter on psychopathology the author (who is a consultant psychiatrist in Birmingham) reviews the theories of Freud, Jung, Adler and many others, and includes some 30 pages of quotation from Brown's " Freud and the Post-Freudians". This makes heavy going even heavier besides causing one to wonder what remains unquoted in Brown's book.

The section on clinical conditions is clear and stimulating, especially the chapters on organic conditions and psychosomatic medicine. A book of this size can afford to deal amply with the social implications and developments of psychiatry, and this is well done. One's experiences at Warlingham Park or Bexley should be greatly enriched by the pages on social psychiatry.

A lot of space is devoted to forms of treatment, and whilst one is surprised at the complete omission of chlordiazepoxide (librium), one wonders if the detailed technique of insulin shock therapy really merits inclusion.

This is a comprehensive and many-sided work, and whilst it is not a book to start with as a student, it is indeed a useful " guide to psychiatry " for those interested in the subject, and the many references in the text readily enable one to take matters further. Few, of course, will agree with everything Dr. Sim has to say, but all will be provoked to thought.

FREDERICK HIGGS.

SPORT

ASSOCIATION FOOTBALL

The Club had an outstanding success against University College in the 1st round of the University Cup—success moreover against one of the strongest sides in the cup by the convincing margin of 4 goals to one. This victory was achieved by team-work of a high order, with individual skills of ball control and intelligent running of the ball not being neglected. Confidence in each other noticeably improved as the game progressed, and the result is very encouraging for future cup matches.

Nine Guy's players helped the United Hospitals' side to reach the quarter-final of the Argonaut trophy:—Parry, Davies, W. W., Cochrane, Davies, P. D., Shepherd, Elias, Cutler, Powell-Jackson and Atkins.

RUGBY FOOTBALL

Recent matches have shown a continuation of the resurgence, and the team has now only lost one match in the last six. Against Old Whitgiftians, despite a first-half try by Allen, following good work by Wright, the team only awoke to their task after the loss of Brown in the first half. A continuous hammering of the visitor's line just failed to have its reward.

Against Streatham, founded 1893, Guy's fought a similar battle. Taking most of the first half to get into their stride, and emerging successfully through a 25-minute battering in the second half, two late scores clinched a well organised victory by 14—6. More powerful play by the centres Wright and Allen, both try scorers, was complemented by the accurate kicking of Edgar (a conversion, a penalty goal and a dropped goal).

GOLF

The Club are to be congratulated on winning the semi-final of the Hospitals Cup against London Hospital by 3 matches to 2, at Croham Hurst.

Individual performances:—

D. Adams lost 2/1.
D. MaCay lost 3/2.
M. J. Brummitt won 7/6.
B. Bevan-Jones won 5/3.
E. S. Baird won 7/5.

The Club now meet Middlesex Hospital in the final.

SWIMMING

For the first time in its history, Guy's entered a full men's team in the University of London Championship, and for the first year ever, the Inter-Collegiate Cup came to a hospital. For too long, the hospitals have boycotted these events and only the best swimmers have competed. This outstanding win was achieved, moreover, by fine team-work, backing up the individual triumph of R. Jones, who achieved a remarkable double by winning the men's 110 yards Back Stroke in convincing style, and the men's 110 yards Free Style in a fashion more likely to leave the whole team in a state of heart failure.

But team-work also prevailed—the Medley Relay only losing to North-ampton by a touch, both teams recording the same time, while the Free-Style Relay won their race with yards to spare over Northampton College.

Valuable points were also picked up by Valentine, Holland and McGlynn.

Thus, D. I. C. Barnes, Guy's Captain, collected the inter-collegiate cup at the end of an outstanding and memorable evening in the history of the club.

RUGBY FOOTBALL

GUY'S v. ROSSLYN PARK

At H.O.P. 16th November, 1963.

Result: lost 16—6

On Saturday, 16th November, Guy's 1st XV, after three well deserved wins against Old Blues, Old Haberdashers and London University, were at home to Rosslyn Park.

Guy's opened the scoring in the first five minutes by a 30 yard penalty goal by Edgar following an offside infringement by Rosslyn Park. The Guy's pack were holding their own well against a heavier side and obtaining a fair share of the ball. There seemed, however, to be some defect in the midfield defence which was exploited by Rosslyn Park and resulted in their first and second tries, both of which were not converted. Guy's were reluctant in their backing up and Biggs, after good opportunist moves, was often left on his own with no player to pass or kick to. Just before half time Rosslyn Park scored from a set movement. The try was converted and the score at half time was 11—3.

In the second half the Guy's backs began to use the ball more effectively than in the first. MacGregor, who had played a steady game, was unlucky in being bundled into touch in goal after a good blind-side break. Guy's at this time were on top but no excuses can be offered for the dropped and poor passes which occurred so near to the line when certain tries seemed imminent Guy's were rewarded when Peace, after some good rucking following a line-out, went over to score. The try was not converted. Guy's once more relaxed after scoring to find that Rosslyn Park had scored a push-over try, the score now being 16—6. In the remainder of the game the Guy's backs penetrated deep into the opponents half but spoiled good moves with poor finishing and a lack of backing up when potential scoring opportunities arose. The final whistle brought to an end an interesting game between two basically equal sides. Let us hope that they will learn by their mistakes and use their latent talent which we know they possess in producing results and not condolences from players and spectators alike.

TONY THOMAS.

GUY'S v. OLD WHITGIFTIANS

At H.O.P. 30th November, 1963

Result: drawn 5—5

Although a draw was a fair result, Guy's should not get too complacent about this performance. Their first half showing was woefully poor and they were fortunate to change over at half-time level 5—5.

Their fortnight's holiday had done them little good, and it was not until they lost Brown towards the end of the first half that they improved.

The pack lacked a sense of urgency up till then and were slow in the loose. The half-backs were hesitant in their kicking and had far too many kicks charged down.

An early Whitgift goal was equalised by a breakaway try, mid-way through the first half. Wright was quick to follow up an opposition's mistake and kicked the ball passed the full-back. Allan won the race for the touch-down and Edgar converted

Guy's, reduced to fourteen men throughout the second half, showed improved form and pressed hard for the first fifteen minutes of this half. Biggs was unlucky to have a try disallowed. The rest of the half was even and the weakened Guy's pack more than held their own, thanks to fine hooking by Price and line-out play by Peace.

Team:

R Myall; D. Biggs, C. Wright, A. Allan, R. Kerner; A. Edgar, H. MacGregor; J. Davis, E. Price, A. Fisher; P. Peace, A. Kingdon; R. Brown, D. Hendricks, I. Baker (Capt.).

JOHN ONI-ORISAN.

ASSOCIATION FOOTBALL

GUY'S v. UNIVERSITY COLLEGE

At H.O.P. 30th November, 1963

Result: won 4—1

Guy's played University College in the 1st round of the University Cup at H.O.P. The college side, at present second in the top division of the University League, soon showed themselves to be a formidable side.

The game opened at a furious pace with good soccer being played by both sides. The Guy's defence gradually got on top and it was good to see, at last, defenders going strongly into the tackle. It will be essential in the future when playing in cup matches for the rearguard to play just as hard from the kick-off.

The forwards played ideally in the conditions, far more direct than they have done in the past. The Hospital opened the scoring mid-way through the opening half with a good goal by Atkins. University College soon equalised however and the sides changed over even. One felt that whoever got the next goal would be victorious. In fact, Cutler, the Hospitals centre-forward, got a brilliant goal from a fine pass by Cochrane, and the home side eventually ran out 4—1 winners, with further goals by Atkins and Cutler, both well taken.

It is difficult to remember a Guy's side playing so hard, so competently together with every single player giving his best. W. W. Davies played brilliantly at centre-half, but it cannot be emphasized too strongly that this was a 'team' effort and if this standard is maintained the side should go much further in the competition.

PETER DAVIES.

Team: L. G. Parry; V. Holden, J. Cochrane; P. D. Davies, W. W. Davies, N. Trayfoot; R. G. Shepherd, E. Elias, J. Cutler, J. Powell-Jackson, A. Atkins.

SWIMMING

UNIVERSITY OF LONDON SWIMMING CHAMPIONSHIPS

Guy's Results

110 yds. F.S.—1st R Jones. Time 63 secs.
110 yds. Bk./S.—1st R. Jones. 69.3 secs.
110 yds. B./Fly—4th K. McGlynn.
1 min. 15 secs.
220 yds. Br./S.—4th B. Valentine.
3 min. 4.2 secs.
5th J. Holland. 3 min. 8 secs.
Medley relay—2nd Jones, Valentine, McGlynn, A. Forbes.
Freestyle relay—1st Forbes, McGlynn, Valentine, Jones.

Ladies events

Unfortunately, the ladies did not enter a comprehensive team If they had entered a full team it seems likely that they would have had a reasonable chance of taking the Ladies' Intercollegiate Cup.

The highlight of the evening was a display of diving, by Miss Janet Higgs. This display earned her deserved applause at the poolside, and the U.L.W. Championship. Diving with Miss Higgs was Miss J. Hock, who took third place.

The relay teams were a cause of fluctuant success and failure. In the Medley relay the team started well but met its downfall on the very difficult Butterfly leg. The Freestyle leg gained ground again and proved that a fit and balanced team would be quite capable of taking on any of the ladies colleges.

In the Freestyle relay the same was true.

Guy's Results

The ladies gained third place in the championship behind U.C. and C.E.M.

Ladies Diving—1st J. Higgs; 3rd J. Hock.
Medley Relay—4th J. Hock, J. Gaskin, J. Abels, R. Goldberg.
F/S Relay—5th J. Abels, J. Higgs, H. Barnes, R. Goldberg

BOAT CLUB

On Wednesday, 20th November, the Boat Club entered for three events in the United Hospital's Winter Regatta at Putney. This was only a token entry because of the shortage of skilled oarsmen from which the club suffers this year, and training was limited because they did not wish to interrupt the training of the Eight for too long.

Our Junior four first met crews from St. Thomas's and the Royal Dental Hospital, and in this race they dead-heated with the Dental Hospital, beating St. Thomas's easily. Both went through to the final, and this was won by the Dental Hospital by 1¼ lengths, St. George's being a length up on us. Lack of practice together proved detrimental to Guy's in this race.

The Novice IV rowed very well to win their first race very satisfactorily, beating St. Bartholomew's 'A', and going on to the Semi-Final. In this they met St. George's, and lost by a length in a close and hard fought race. St. George's went on to win the event, and then retired, admitting that their crew was not entirely novice. The cup went to St. Bartholomew's 'B', the other finalists, but it was very disappointing for our crew to be robbed of a chance in the final. P. Ticehurst did a splendid job of stroking the novices, and with some more experience will be a very useful member of the club.

In the Junior Sculls, S. Gregson won his first two races with easy competence, beating P. Amundsen of St. Bartholomew's, and D. Markby of St Thomas's. However, in the final his lack of opportunity for practice told, and after a gruelling race in very blustery weather, he lost by a few lengths to D. Howe of St. Thomas's.

He had one consolation, however, for it transpired that the same D. Howe won the clinker division of the Silver Sculls race two years ago, and also rowed as stroke with O. N. Tubbs in the winning double sculls in this U.H. Regatta. Thus, opposition was of a high quality.

The Regatta was, on the whole, well organised, and the Guy's members all enjoyed it. The tides were rather difficult due to a strong westerly wind and the heavy flow of flood water. The combination of wind meeting the incoming tide produced some very rough water at times. The 'Daily Telegraph' should have the last word:—"The day ended with the river deep in the boathouses, the moon well up, and the finals of senior and junior sculls passing each other in opposite directions."

Crews and Results

Junior IV

Bow	R. Forrest.
2	C. Soutar.
3	P. Burton.
Stroke	P. Telling.
Cox	S. Gregson.

Heat: —
Semi-final: Dead Heat with Royal Dental Hospital.
Final: Lost by two lengths to Royal Dental Hospital.

Novice IV

Bow	N. Pinkney.
2	N. Daws.
3	A. Hodgkinson.
Stroke	P. Ticehurst.
Cox	D. Evans.

Heat: Won by 1¼ lengths against St. Bartholomew's 'A'.
Semi-final: Lost by 1 length against St. George's
Final: —

Junior Sculls: S. Gregson.
Heat: Beat P Amundsen, Easily.
Semi-final: Beat D. Marhby, 4 lengths.
Final: Lost to D. Howe, Easily.

CROSS COUNTRY

The Club are continuing a busy season and are fielding two teams in the University League. They have had matches also against Latymer School, St Mary's College, Royal Vetinary College, Westminster Bank, London School of Economics and London Hospital.

P. Witting is again running well and has represented the University against Cambridge.

A. Lakin has run his way into the United Hospital first team and seems to be improving with every race.

League results

1st League—2nd match.
P. Witting 14th.
A. Lakin 25th
B. Valentine 29th.
D. Cooper 43rd.
R. Wilson 47tn
E. Bowen-Jones 49th.
Have 8th position overall after two matches.
2nd League—2nd match.
J. Wheeler 26th.
A. Brown 74th.
N. Tilling 120th.
C. Coffin 129th
Have 19th position overall after two matches.

LADIES SQUASH

GUY'S v. UNIVERSITY COLLEGE

Home 28th November, 1963

A. Moore, lost 1—2.
C. Stannard, lost 1—2.
P. Hubbard, lost 1—2.
S. Larkin, won 2—0.
C. Arch, lost 1—2.
Guy's lost 1—4.

GUY'S v. ST. MARY'S HOSPITAL

Away 5th December, 1963

R. Williams, lost 0—3.
C. Stannard, lost 0—3.
P. Hobbard, lost 0—3.
Pr. Heather, won 3—2.
J. Sutcliffe, lost 0—3.
Guy's lost 1—4.

HOSPITAL INFORMATION

APPOINTMENTS VACANT

GUY'S HOSPITAL, S.E.1.

Guy's Hospital requires **Senior House Officer in Clinical Pathology** (resident) on February 1st, 1964, tenure seven months. Application forms from the Superintendent, to be returned by **January 7th, 1964.**

GUY'S HOSPITAL, S.E.1.

Applications are invited for the post of **Registrar** (middle grade) **in the Department of Dermatology** with duties to commence as soon as possible. Application forms are obtainable from, and should be lodged with, the Superintendent, Guy's Hospital, S.E.1., not later than **31st December, 1963.**

EVELINA CHILDREN'S HOSPITAL OF GUY'S HOSPITAL, SOUTHWARK BRIDGE ROAD, LONDON, S.E.1.

Applications are invited for the post of **Part-time, Non-Resident, Casualty Officer** (Senior House Officer Grade) for six months from 1st February, 1964. Six morning sessions weekly. Salary 7/11th of full-time rate. Applications and copies of three recent testimonials should reach the Hospital Secretary by first post on **Wednesday, 1st January, 1964.**

EVELINA CHILDREN'S HOSPITAL OF GUY'S HOSPITAL, SOUTHWARK BRIDGE ROAD, LONDON, S.E.1.

Applications are invited for the post of **Resident Paediatric House Officer** (with casualty duties) for six months from 1st February, 1964. The appointment is recognised for the D.C.H. and consists of four months medicine and two months surgery. Candidates must be registered practitioners and should apply giving age, nationality, qualifications (with dates), and copies of three recent testimonials, to the Hospital Secretary by first post on **Wednesday, 1st January, 1964.**

GUY'S HOSPITAL, S.E.1.

Applications are invited for the post of **Ophthalmic Registrar** (middle grade, two sessions per week) with duties to commence as soon as possible and appointment until 30th September, 1965. Application forms are obtainable from, and should be lodged with, the Superintendent Guy's Hospital, S.E.1., not later than **31st December, 1963.**

PASS LIST

ROYAL COLLEGE OF PHYSICIANS OF LONDON

M.R.C.P.

J. F. Hallpike

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Primary F.R.C.S.

W. Bunting
H. R. Davies
M. S. King
J. W. S. Rickett

ROYAL COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS

D.Obst.

J. P. Barker
P. J. Doust
Ann D. Fairclough
Mary B. MacKeith
I. C. McLellan
D. Parrott
J. Farmer
J. M. Forsythe
R. G. G. Gain
D. L. Hall
I. W. Hanwell
L. Kwasny
R. A. Lewin
Corinne J. Thomas
J. P. Vaughan
P. L. H. Vernon
J. A. Wall
W. F. Whimster
E. Young

CONJOINT BOARD

D.A., May, 1963

A. Dominick

D.C.H., October, 1963

J. S. M. Beales
Audrey J. Belsham
R. Cook
I. W. Hanwell
D. R. Harvey
Judith M. Hawker
J. R. Norman
S. M. Patient

UNIVERSITY OF LONDON

3rd M.B., B.S., October, 1963

Honours

A. Thomas
(distinguished in Obstetrics and Gynaecology)

Pass

J. N. C. Atkinson
V. Borirakchanyavat
Cynthia M. Britton
A. S. G. Clark
M. E. Conybeare
D. K. C. Cooper
R. Cooper
V. E. Egwatu
M. C. Ellis
Foong Weng Sum
J. R. Glover
R. P. Hollingsworth
P. Ivanans
B. S. Kalsi
Danuta M. H. Laganowska
Lim Mor Gan
J. H. T. Marshall
A. Murphy
I. C. Perry
J. H. Ransford
D. J. Simler
V. Tanboonrithi
McD. J. Wright

Part 1

I. R. McD. Anderson
Charlotte I. Askay
A. N. Bowden
K. M. Burshan
Chan Chew-Koon, M.
J. N. Davies
A. E. Davis
A. Dowlatdad
R. E. Dziewanowski
G. Ebrahimzadeh
E. Eckersley
N. S. Faithfull
J. D. Goddard
Patricia N. Hall-Matthews
R. J. Hart
T. E. J. Healy
M. J. Hoyle
K. B. Hughes
Janet E. Husband
T. B. W. Johnson
T. N. Jones
J. Lambourn
C. J. R. Lewis
M. N. Maisey
M. D. Middleton
D. G. Nancekievill
B. G. R. Neville
J. E. A. Oni-Orisan
A. Palmer
Jean M. Parker
R. J. Parker
Elizabeth A. Pepper
Juliet D. Pike
M. O. Rake
N. Ramsbottom
Susan M. Reay-Jones
W. G. Reeves
C. R. Sanderson
J. P. Saunders
Evelyn J. Sherbel
K. F. Standage
Ilse B. Stevenson
R. L. Strickland
K. J. W. Taylor
G. I. Tennekoon
I. Vadasz
M. B. Williams
F. E. Willmott
N. S. Young

Part 2

N. S. Faithfull
G. T. Klauber
C. J. R. Lewis
I. A. MacKenize
L. C. Nash
D. R. Wilson

Part 3

I. A. MacKenzie
L. C. Nash
B. S. Pound

Part 4

B Donovan
G. Ebrahimzadeh
N. S. Faithfull
G. T. Klauber
C. J. R. Lewis
I. A. MacKenzie
L. C. Nash
B. S. Pound

SOCIETY OF APOTHECARIES OF LONDON

Final Examination, November, 1963

Medicine

R. J. Parker

Midwifery

Julia A. S. Rice

ROYAL COLLEGE OF SURGEONS OF EDINBURGH

F.R.C.S., October, 1963

R. L. Edwards
P. C. C. Pitt
F. E. Roper

PAPERS BY GUY'S MEN

In order to make this list as complete as possible, Guy's men whose papers have not been printed in this column are asked to send the Editor details of their publications.

Blacker, C. P. Dr. Yoshio Koya: a memorable story. *Eugen. Rev.* 1963, **55**, 153.

Blackwell, B. Hypertensive crisis due to mono-amine-oxidase inhibitors. *Lancet* 1963, ii, 849.

Blake, G. C. Incidence and control of bacterial infection in dental spray reservoirs. *Brit. dent. J.* 1963, **115**, 413.

Dodson, B. Fusidic acid in the management of phage type 80 staphylococcal infection. *Lancet* 1963, ii, 659.

Campbell, M. Mode of inheritance in isolated laevocardia and dextrocardia and situs inversus. *Brit. heart J.* 1963, **25**, 803.

Chouverakis, C. Parasympathomimetic agents and the metabolism of rat adipose tissue. *Metabolism* 1963, **12**, 936.

Falconer, M. A. Siezures induced by movement; report of case relieved by operation. *J. Neurol. Neurosurg. Psychiat.* 1963, **26**, 300.

Fry, John. Nature and course of coronary heart disease. *Practitioner* 1963, **191**, 781.

Fry, J. and another. Cardiovascular disease. *Med. Wrld.* 1963, **99**, 481.

de Groot, M. H. Role of hallucinogenic drugs in depersonalisation and allied disorders, in *Hallucinogenic drugs and their psychotherapeutic use.* Ed. R. Crochet and others. 1963.

Hamilton-Miller, J. H. T. Inducible penicillinase in *Proteus Morgani. Biochem. Biophys. Res. Comm.* 1963, **13**,43.

Hawkins, C. F. *Diseases of the alimentary tract.* Heinemann, London, 1963.

Horton, R. E. Articles on Gall-bladder and bileducts, Liver and Pancreas in *Medical Annual*, 1963.

Ingram. F. L. The pattern of bone in health and disease. *Dent. Practit.* 1963, **13**, 328.

Ingram, F. L. Radiology of cysts of the maxilla. *Brit. J. Radiol.* 1963, **36**, 829.

Keen, H. and Chouverakis, C. Immunoassay method for urinary albumin at low concentration. *Lancet* 1963, ii, 913.

Kite, E. de C. and Grimble, A. Psychiatric aspects of venereal disease. *Brit. J. ven. Dis.* 1963, **39**, 173.

Neill, D. J. Artificial denture problems. *Practioner*, 1963, **191**, 328.

O'Gorman, P., Allsopp, Kathleen M. and others. Sickle-cell haemoglobin K disease. *Brit. med. J.* 1963, ii, 1381.

Pentney, B. H. Grief reactions in general practice. *Practitioner*, 1963, **191**, 345.

Punt, N. A. Coping with singers emergencies. *News* 1963, No. 48, p. 8.

PERSONAL

Special rates for Guy's Staff, Students, Nurses and Subscribers to the Gazette. 5 words 10s. 6d. 15 words 21s. 0d. Box Numbers 1s. extra.

Ordinary rates 15s. 0d. 5 words. Box Numbers 1s. extra.

ASTON MARTIN DB 2/4. Only 43,000 miles. September, 1955. Maroon. 3-litre Vantage engine. Excellent condition, £590. Teddington 6698.

TO LET: Orpington (Guy's 35 minutes door-to-door) furnished house, 3 bedrooms, garden, garage, £8 8s. 0d. p.w., 2-year lease, vacant mid-January. Apply Dr. B. A. Latham, Orpington 23879.

VAUXHALL CRESTA, 26,000 miles, 1958, blue white, carefully maintained, (Vauxhall servicing) £400, Leominster: 2164, Herefordshire.

A Christmas Quiz

ANSWERS

1. A mustard factory.
2. Hippocrates.
3. £2 million.
4. £45.
5. £1 10s.
6. All except for (d).
7. 1872.
8. A South American Lungfish.
9. Workers at Guy's according to a "Daily Mirror" report.
10. Mr. Barnado, a medical student at The London.
11. (a) Inigo Jones. (b) Christopher Wren.
12. 'The obscene panels in the externs' room, the milk churn and the fireman's helmet!' —see "Gazette", 13th July, 1963.
13. 1. Rugby—1843. 2. Rowing—1844. 3. Cricket—1855.
14. (a). 18% (b) 14%.
15. (a). A Hernia through the linea semilunaris.
    (b). "Shenton's Line", the absence of which is of diagnostic significance in congenital dislocation of the hip.
    (c). "Hilton's Law" states that where a nerve supplies the muscles acting at a certain joint, it will also supply that joint itself as well as the skin over it.
    (d). Johann Fredrich Meckel (1714-1774) gave his name to M. ganglion and M. cave. His grandson, also of the same name described M. cartilage and M. diverticulum.
    (e). Although the name of Mahomed has not been commemorated as a medical eponym he gave the most complete account of the clinical picture of essential hypertension that had been written by that time as well as describing a sphygmograph.
16. (b)., (c). and (e).
17. Sir Samuel Wilks.
18. A method of rowing a four when the four oarsmen have their oars on the following sides of the boat, bow to stroke: Right, Left, Left, Right.
19. They have all been to Algeria.
20. When the College is evacuated of housemen.

GUY'S HOSPITAL GAZETTE

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Editors *W. G. Reeves*
T. C. Davis

Sports Correspondent *E. Tiller*

Guy's Hospital, London

PASSIM

Higher Centres?

A university should provide an experience of living as well as an opportunity for learning. So said Dr. Albert Sloman in his fourth Reith lecture, earlier this month. This attitude, although applicable in a high degree to the medical course is often conspicuous by its absence. It is at university that one of the more diverse selections of individuals to be found in our society meet together to receive a higher education. Yet the "living" may be almost entirely extra-curricular and extra-mural, divorced from the student's academic life.

Time is short and staff few and thus it is, on the surface, economically more productive for students to fit into the well-tried mould before being drafted by fate or fortune into many different environments. But how much greater might the breadth of experience of the qualifying doctor be in terms of comprehension if during his course he had experienced encouragement to take part in informal studies in, e.g., History of Medicine, English Literature and Philosophy. As with advancing progress the present requirements take on more of a specialised nature, how much greater is the need to increase one's powers of correlation by acquiring a wider experience of Medicine in its more peripheral connections with other disciplines.

There are three main factors which aggravate this situation at the present time: (1) The intrinsic nature of the present medical course requiring a large amount of detailed empirical knowledge; (2) An acute shortage of residential accommodation, and (3) Lack of staff to cope with, should it be fully sanctioned, a more or less informal tutorial system extending throughout the pre-clinical and clinical courses. Above all, and particularly in subjects not immediately related to his next set of examinations, the student needs guidance. It is the channelling of the often irrelevant interests of a student that may befit him more widely to become himself a counsellor and guide.

More opportunities for student research under supervision and even teaching by senior students who could take on the rôle of supervisors as practised at some other universities, would enable him to experience all three aspects of the learning process.

At the present time one hears of a great deal of discussion as to the directions which changes in the curriculum should take. Some advocate an expansion of the clinical course to the expenditure of some of the preclinical teaching: others suggest a fundamental honours degree for all those studying subjects allied to Medicine, e.g., a B.Sc. in Human Biology. But whatever the exact nature of any subsequent change, the existence of a tutorial method within it would enable most students to obtain a wider and more profound education.

One can say that it is the Labourer who *earns*, the Learner who *accumulates*, the Ambitious who *climbs*, the Sage who *pronounces*,

the Passionate who *involves* and the Idealist who *feels*. Each one of these caricatures represent a desire to communicate, although within the framework of a system which cannot adapt to incorporate and channel all these varieties of approach, there may be a significant number who do not pass through the eye of the needle.

In the New Year we hope to include further discussion in the *Gazette* concerning medical education in general and particularly the curriculum at Guy's. We would welcome contributions from any who may be interested in writing on this subject.

Monkey Business

The national press recently has commented on the U.S. serviceman who is walking around with a transplanted chimpanzee's kidney inside him, on the Russians who are now transplanting human cadaver bones, seemingly in toto, and on a young Scots doctor who is going to start his own flying doctor service to the farther-flung Scottish islands. It is not usual for the medical press to sensationalize argument or discussion. The correspondence column in the *Lancet* must be as widely read as the Court Circular but probably not by the same people. There must be a welter of "human stories" which the national press could gobble up quite cheerfully and regurgitate into an all too grateful audience. Here is not the place to discuss the ethics and right of mass production medical weeklies and T.V. shorts, but it is easy to imagine what could be their outcome. "Flying chimpanzee service delivering kidneys to human cadavers?" Or something like that.

Two Way Stretch

A reply from the Students' Club representatives to a letter published two issues ago complaining of the lack of any liaison between nurses' and students' activities, prompts one to wonder whether there are ways in which cultural and social rapport between the two groups could be arrived at. At first sight there appears to be considerable co-ordination. With the Music Club's *Messiah* and backstage work at the recent Theatre Club production, both bodies were able to take advantage of common circumstances and work together. But this is far short of what many nurses would seem to want. Of course, their off-duty hours necessarily prevent them from complete participation and there is sometimes scant advertising directed at them, but if we are to believe what we are told, and the little evidence there is seems to support this view, then societies such as the Quodlibet and the Debating Society could well begin to tap a previously hidden well of talent and interest. There does, however, seem to be no easy answer to the problem and there must be a change of heart before there can be a change of system. If student nurses were sufficiently well-informed and sufficiently interested, then excited Brownian movement could result. By the way, have they got any societies of their own worth joining?

GUY'S DIARY

DECEMBER

EXHIBITION. *Head Injuries.*

31st	T.	1.00	Mr. ECKHOFF. Clinical Lecture. *Gastrectomy.*

JANUARY

EXHIBITION. *The Supra-renal*

2nd	Th.	1.00	Dr. HARDWICK. Clinical Lecture. *Polyarteritis Nodosa.*
3rd	F.	1.00	Mr. BRAIN. Clinical Lecture. *The Clinical Presentation and Management of Patients with Diaphragmatic Hernia.*
6th	M.	1.00	Mr. M. FALCONER. Clinical Lecture. *The Significance of Speech Disturbances in Epilepsy.*
7th	T.	1.00	Dr. MANN. Clinical Lecture.
9th	Th.	1.00	Mr. BEARD. Clinical Lecture.
10th	F.	1.00	Professor BUTTERFIELD. Clinical Lecture.
13th	M.	1.00	Dr. BAKER. Clinical Lecture.
14th	Th.	1.00	Mr. BLACKBURN. Clinical Lecture.

NOTICES

Guy's Hospital Society

South Wales and Monmouthshire Branch

Our usual Dinner, successful for the past nine years, is being held on Saturday, 21st March, 1964, at the Park Hotel, Cardiff, at 7 p.m. for 7.30 p.m. Please note this in your diaries. A further notice will appear later. Tickets to be 25/- and 5/- membership to the Society. This date coincides with the Wales v. France International Rugby Match.

G. MORWENT BROWN,
HUGH H. HARLEY,
Joint Hon. Secretaries.

Guy's Hospital Ladies' Association Flower Service

The Ladies' Association is most urgently in need of help in connection with the above Service. Would any lady who can spare one morning a fortnight (from 9.45 a.m. to about 12.15 p.m.) to arrange the patients' flowers in the wards, kindly contact Mrs. Cooper, 34, Shepherd's Hill, N.6 (MOU. 9070).

Pupils' Physical Society

Beddard and Laidlaw Prizes

Two prizes are awarded annually by the Pupils' Physical Society—the Beddard Prize, worth £5, for presentation of a case-history, and the Laidlaw Prize, also of £5, for the best paper on any subject of medical or surgical interest. The prizes are awarded at a meeting in March when the papers are read. Last year's prize-winning papers are being published in the Guy's Hospital Reports.

Would anyone who is considering entering for these prizes, please notify the Secretary, Christina Lawrie or the President, Hugh Tunstall Pedoe, who will be pleased to give further details.

Biochemistry and Schizophrenia

by N. A. GREGSON
Biochemistry Department

Until the 19th century the schizophrenic was set apart by the rest of society. Regarded by primitive man as being possessed by spirits, good or bad depending on the time and place, and beyond human help. Such ideas are no longer held in the Western world. At the present time there are two alternative hypotheses for the aetiology of the disease, either it is explicable in the terms of psychoanalytical concepts or it is a discrete metabolic lesion. Only the second hypothesis is at the moment open to experimental study.

The view that schizophrenia and other mental diseases, are organic in nature and in origin has been expressed at intervals since the times of Aristotle but little progress has been made in elucidating the nature and origins of schizophrenia. No formal cellular pathology of the brain has been found and neurophysiological studies have been unable to show any significant disturbance. The idea that schizophrenia may be the result of some metabolic abnormality has gained support over the last fifty years. That schizophrenia may have a molecular basis, as distinct from being some abnormality arising from the poor integration of early experience, derives support in part from the mass of observation on psychosomatic relationships. The demonstration of molecular interaction at the level of synaptic transmission, the molecular and metabolic associations of the cell membrane of excitable cells and the actions of drugs on behaviour and mind, have greatly strengthened the hypothesis that schizophrenia has a biochemical basis. The general hypothesis for the biochemical basis of schizophrenia is that there is some metabolic defect, probably genetically determined, which directly or indirectly impairs brain function so that it in turn becomes disorganised under appropriate stress ; behaviour, perception and personality of the individual thus becoming disturbed. Although it is true to say that little progress has been made as yet in elucidating the aetiology of schizophrenia, it is not true to say that our knowledge of the disease and of the problems associated with its investigation has made no advance.

There are many difficulties in the investigation of schizophrenia arising from the very nature of the disease. Schizophrenia is not regarded as a single disease entity by the psychiatrist, and psychiatry has an extensive classification of the schizophrenic psychoses. The laboratory investigator is also made aware of the fact that he may be

dealing with several diseases. He is rarely ever able to show a significant mean difference for the schizophrenic from a normal control population for any parameter, but generally finds that the schizophrenic population falls within a much wider range. The size of his experimental group may not be large enough to be resolved into several populations. Also there is the strong possibility that the classification system used by the psychiatrist may not be an appropriate system for the biochemist. This is well demonstrated by the case of the toxic psychosis resulting from addiction to amphetamine which clinically is indistinguishable from some forms of schizophrenia, but which can be differentiated by the demonstration of amphetamine metabolites in the urine. This is probably an inherent difficulty in the investigation of schizophrenia which might be resolved if great care is taken to work on a large population or to study more closely groups falling within different regions of a distribution, or thirdly, by grouping patients according to some other characteristic than clinical classification, such as physical build or their responsiveness to certain drugs. In addition to this obstacle there are the more obvious variables which have to be considered, such as the actual clinical state of the subject at the time of the investigation and the clinical history. Of particular importance is the actual physical state of the subject. Infections, malnutrition, and vitamin deficiency will alter many biochemical parameters and have been confusing factors in many early investigations.

Normally, the biochemist is only able to obtain blood, urine or CSF from the patient, and he works on the assumption that the metabolic peculiarities which are responsible for the disease are reflected in these body fluids. This assumption is derived in part from the evidence that genetic constitution plays a rôle in predisposing to the disease. It is thought that this genetic effect would present as a general metabolic defect. As it is, one of the greatest difficulties experienced is that of deciding whether the differences found are directly related to the causation or whether they are a consequence of, or concomitant with, the condition.

The evidence that heredity plays some part in the development of the disease is rather scant and is based mainly on twin studies. Concordance rates of 60 per cent or more are found in monozygotic twins as compared to 10 per cent in dizygotic twins. Even after a rough correction is made for environmental similarity the concordance rate for monozygotic twins is significant and indicative of genetic effect. Although the idea that genetic constitution plays some part in predetermining the disposition to development of schizophrenia has been generally accepted, obviously the manner of its expression is still unintelligible. Several genetically determined metabolic lesions in other diseases are now recognised which give rise to abnormalities in the ultimate development and functioning of the central nervous system, but even in a condition such a *phenylketonuria,* where the precise metabolic lesion is known, the actual mechanism by which this defect expresses itself in the brain is open to conjecture. Recent studies on the association between "personality" and the physical

functioning of the organism have demonstrated a very close interaction. For example, rats selectively bred for "emotional" reactivity show closely correlated differences in endocrinal activity and it is impossible to say which is the cause and which the effect or whether such a relationship exists.

Biochemical Investigations

The biochemical studies which have been made of schizophrenia are principally investigations into carbohydrate metabolism, endocrinal metabolism (with particular emphasis on steroid metbolism), the metabolism of centrally active molecules such as the catechol amines, and the attempted elucidation of a toxic "principle". In actual fact, a great deal of overlap may exist between these fields of investigation, for example, an unusual catechol metabolite may be formed which is toxic and which interferes with the metabolism of all cells.

Carbohydrate Metabolism

A great deal of the earlier work was devoted to the investigation of carbohydrate metabolism, a consequence of an early claim that schizophrenia was associated with a lowered basal metabolic rate. Little evidence for a general impairment in carbohydrate metabolism was obtained however, excepting that it became apparent that the schizophrenic subject did not adapt to periods of stress so ably as did the normal individual. Blood lactate and ketoacid levels returned to normal resting levels much more slowly. Several groups of workers also reported that schizophrenics frequently showed abnormal forms of glucose tolerance curve and some resistance to insulin. These changes however did not appear to be specific to schizophrenia, also being found in a number of neurological conditions. More recent work has been concerned with investigations into the finer processes of carbohydrate and energy metabolism. Results of a study of the adenosine triphosphate (ATP) metabolism in the erythrocytes of schizophrenics have suggested some depression in high-energy phosphate metabolism. Studies into the glucose metabolism of erythrocytes demonstrated that following insulin administration in the normal there was an increased glycolytic degradation of glucose as compared to the amount entering the pentose shunt and an increased ATP production. Both of these effects were depressed in the schizophrenic. However, this defect was found not to be inherent in the erythrocyte but was due to some plasma constituent, for a similar depression was produced in the erythrocytes from normal individuals and in avian erythrocytes when incubated in the serum from schizophrenics. This active constituent has been isolated and identified as a β-globulin.

Endrocrinal function and stress

The suggestion that some defect in endocrinal function may be involved in the production of schizophrenia is an old one and although the possibility has been examined fairly closely for a long time no absolute positive indication has been found as yet. Furthermore, it is well recognised that disturbances in the activity of the adrenals and of the thyroid are frequently associated with personality and

behavioural changes, exactly how this effect is produced is not known. Schizophrenia is not, however, associated with any consistent endocrine pathology. In studies on large numbers of schizophrenics no significant abnormality in the ketosteroid excretion rate appears, although the range for this group was much wider than that for the normals (2–48 mg./24 h. as compared to 7-18 mg./24 h). The prognosis for subjects at either end of this range was apparently different for the same treatment. Thus good hospital care alone was beneficial for those falling in the lower end of the range and insulin therapy rarely resulted in clinical improvement, or influenced the steroid excretion rate, whereas those patients with high excretion rates were improved by insulin therapy provided that their steroid excretion fell. The studies on whole carbohydrate metabolism and the response to physical exercise in the schizophrenic have been interpreted as indicating a maladaption to stress, possibly resulting from a state of maintained emotional stress. A consequence of such a state would be an abnormal adrenal reactivity. Several workers have, in fact, shown that the adrenal cortex in the schizophrenic does not give the normal response to standardised stress situations. Thus it is possible that in some cases the abnormal steroid output may be a consequence of the disease and in some cases even a natural corollary of the disease. Similar argument may be made for the presence of abnormal thyroid functioning when found.

It is now considered that as far as reactivity to stress is concerned the adrenal medulla and cortex act in concert, thus adrenaline and cortico-steroid support one another in their action. One of the most attractive theories for the biochemical origins of schizophrenia was centred on the abnormal metabolism of circulating adrenaline. This was the adrenochrome hypothesis of Hoffer, Osmond and Smythies. It was based on the observations that an oxidation product of adrenaline, adrenochrome, produced personality disturbances in normal volunteers and that the serum from schizophrenic subjects had greater adrenaline oxidising power than normal serum. In many ways this hypothesis had much to offer, for here was a substance apparently interfering with the psyche, which was a toxic derivative of adrenaline, and which explained the rôle of stress in precipitating the illness. It was moreover produced by the oxidative action of some protein in the serum and thus offered some tangible point for a genetic effect to operate. However, according to such a hypothesis the administration of adrenaline to a schizophrenic might result in some clinical deterioration but this is not the case. Unfortunately, many of the reported findings concerning adrenochrome were not confirmed by other workers, and there is even some doubt as to whether or not adrenochrome has central effects.

The adrenochrome studies were paralleled by studies on the capacity of the serum for oxidising catechol substances such as adrenaline. This work was initiated by Ackerfeldt who introduced the use of the reagent N,N-dimethyl-p-phenylenediamine as an oxidisable "substrate". He found that the serum from manic depressives, schizophrenics and senile psychotics had a much greater oxidising

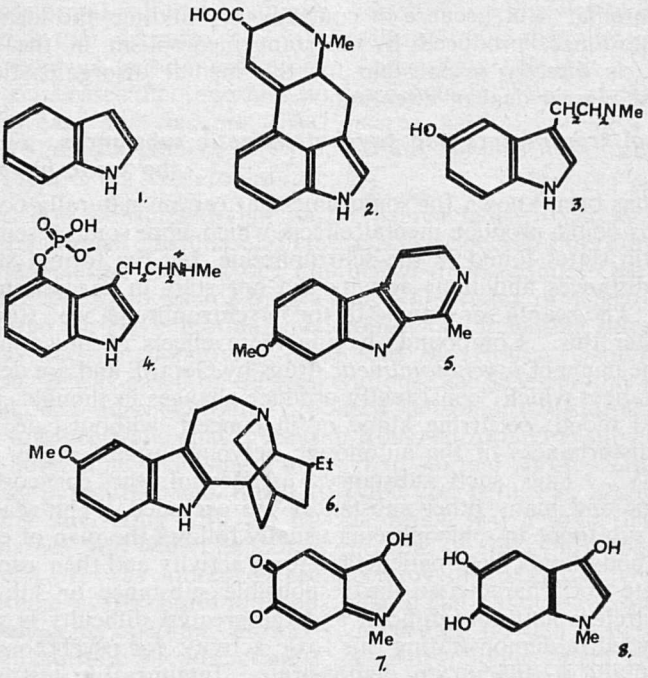
capacity than normal serum. This oxidative power was associated with the copper-containing protein, *caeruloplasmin.* However, after a great deal of careful work it has been shown that this oxidative power of the serum depends not only on the level of caeruloplasmin but also on the ascorbic acid level and it is thus influenced by the subject's dietary state. Although small changes in the caeruloplasmin level have been found in psychotics, similar changes have been found in a number of other conditions, including pregnancy. These changes are regarded as being part of the general response to stress, and thus, although they are still of great interest they are not specific to schizophrenia and are unsuitable for diagnostic purposes. Some workers isolated an abnormal form of caeruloplasmin from the serum of schizophrenics (which they called taraxein) and which they demonstrated to have central effects in animals. So far little other evidence has appeared supporting this claim. Thus the whole adrenochrome hypothesis has gone the way of so many other hypotheses concerning schizophrenia. But because of contradictory findings the idea that a toxic substance, produced by aberrant metabolism in the schizophrenic, is directly responsible for the mental disorganisation still attracted a great deal of attention.

Chemical transmitters and psychotomimetic substances, the toxic hypothesis

It has been known for some time that certain naturally occurring alkaloids could produce mental effects which bore some resemblance to certain states found in the schizophrenic, but the formal study of such substances and their activity did not start in earnest until the 1940's. The search for a toxic factor in schizophrenia was stimulated soon after this. Compounds having these effects of the mind were given the name of *psychotomimetic* drugs by Gerard, and are described as substances which "consistently produce changes in thought, perception and mood, occurring alone or in concert, without causing any major disturbances of the autonomic nervous system or any serious disability". Thus such substances as alcohol, the corticosteroids, thyroxine and many other substances are excluded. The search for a toxic substance in schizophrenia usually follows the plan of examining the body fluids from patients for toxic activity and then attempting to isolate and characterise the responsible substance or substances. This search is naturally difficult and the greatest difficulty is perhaps experienced in demonstrating this toxic activity, for psychotomimetic-like activity is difficult to demonstrate. Innumerable test systems have been devised for testing and evaluating the central effects of extracts. They range from the obvious system of relying on the subjective report of human volunteers to the "objective" assessment by humans of behavioural changes in animals, including such exotic tests as observing disturbances in the web-spinning behaviour of certain spiders. *In vitro* cellular systems have also been used for observing toxic action toward metabolic processes, as described above with erythrocyte suspensions. Many of the toxic substances, or groups of substances isolated from the body fluids of schizophrenics and recognised by the types of test system described above have,

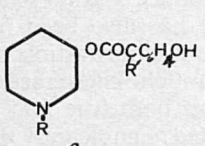
however, proved to be disappointing. The suggestion, for example, that certain groups of phenolic substances, isolated from the urine and which exhibited central effects, were directly linked with the psychosis was later found to be untenable, most of them being dietary in origin. Their levels and variety could be altered at will by dietary supervision without any alteration in clinical state.

Work with psychotomimetic drugs has been more promising, and these substances have provided much information on the biochemical aspects of brain function and integration, as well as indicating more precisely the nature of any toxic substances, if any are to be found, and their possible mode of action. A large number of psychotomimetic substances are now known, many of them products of the organic chemist, and some of their properties have even attracted the attention of the modern military strategists.



Most work has been done on those compounds having an indole nucleus (1) in their structure. The most potent psychotomimetic agent, lysergic-acid diethylamide (LSD25) (2) contains an indole nucleus, as do the tryptamine derivatives such as bufotenin (3) found in the dried secretion of the chinese toad and cohoba snuff, psilocybin (4) from a Mexican sacred mushroom, Harmine (5) and ibogaine (6). All of these substances, excepting LSD 25, are derived from natural sources and have played a rôle in promoting the ecstatic state during religious ceremonies in primitive groups. Adrenochrome (7) and

adrenolutin (8), the suggested active agents in the theory of Hoffer *et al* mentioned above, also contain the indole nucleus in their structure. Besides this large group of compounds there are others such as the piperidyl glycollates (9), related to atropine, the cannabinols (10) from Indian hemp, and mescaline (11) made famous by Aldous Huxley, all of which bear no immediate structural resemblance to the indole compounds. Most of the studies into the mode of action of these substances have been concerned with their possible influence on the metabolism of the suggested transmitter substances, serotonin, the catecholamines and acetyl choline. Serotonin



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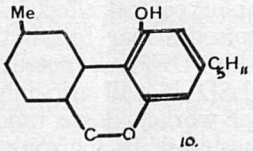

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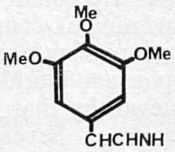

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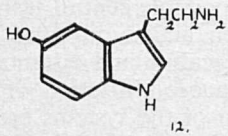

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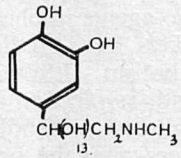

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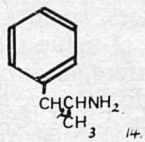


14.

(5-hydroxytryptamine, 12) has been implicated more than the others in this respect because of its chemical similarity to many of the psychotomimetics. Within the brain it is localised primarily in those regions which are phylogenetically old and which are said to be concerned with the more basic and emotional aspects of mind. The administration of 5-hydroxytryptophan, the precursor for serotonin, produces central effects and results in elevated brain levels of serotonin. From this kind of evidence serotonin has been suggested as a central excitatory transmitter substance. Drugs such as reserpine which lead to depletion of central serotonin, and monoamine oxidase inhibitors which lead to its accumulation, have central effects consistent with this idea. LSD 25, one of the most potent of the psychotomimetics, has demonstrable antiserotonin activity, but it appears that its psychotomimetic action may not be directly related to this activity, for the analogues, 2-bromolysergic acid diethylamide and 1-methyl lysergic acid butanolamide have much greater antiserotonin activity yet they do not show the psychotomimetic activity, even at comparable concentrations in the brain. The chemical similarity between mescaline (11) and adrenaline (13) was noted and suggested as being possibly significant in the central action of the former substance. But since little mescaline in fact enters the brain its primary effect must be peripheral. It was suggested that it interfered with the metabolism of adrenaline peripherally, resulting in the production of some toxic product which has a central effect. Mescaline can be a precursor for indole substances and this argument has been used as supporting

evidence for the adrenochrome hypothesis, mentioned above. That some abnormal catecholamine metabolism may be involved in schizophrenia is further supported by the fact that amphetamine (14), bearing a close resemblance to adrenaline, can often lead to a toxic psychosis after chronic addiction clinically resembling schizophrenia.

Although acetyl choline has certainly been shown to be involved in synaptic transmission in the peripheral nervous system,, it is assumed that it plays the same rôle in those regions of the brain where it is found and involvement of the cholinergic transmission system has been suggested as being implicated in schizophrenia. The piperidyl glycollates are potent anticholinergics and produce auditory hallucination and similar complex central effects. It has also been reported that acute psychotic episodes may follow the administration of diso-propyl-phosphofluoridate (DFP), a potent anticholinesterase. It is also noteworthy that LSD 25 will also inhibit both true and pseudo cholinesterase. Several workers have reported significantly lowered levels of serum cholinesterase in schizophrenics.

Besides these various suggestions for the possible mode of action of the psychotomimetic agents implicating possible central transmitter substances, some workers have studied their action on more general aspects of tissue metabolism. LSD 25, mescaline and adrenochrome all interfere *in vitro* with respiration and glucose utilisation. The idea that a disturbance of glucose metabolism, or of the systems producing utilisable energy sources, may be both the mode of action of these drugs and the basic biochemical fault in schizophrenia has, however, been rejected by many workers, because interference in such ubiquitous cell systems would be expected to have a much wider and general effect. Measurement of cerebral blood flow, and of oxygen and glucose consumption have, moreover, failed to demonstrate any differences between schizophrenics and normals. Although the work on psychotomimetics has not yet disclosed their mode of action nor led to anything more than tentative hypotheses for the biochemical basis of schizophrenia, it does emphasise that there may be more than one "chemical basis" for personality.

This has been a very brief review of some of the biochemical theories that have been produced and of some of the methods of experimental approach towards the biochemical basis of schizophrenia. The appended references contain reviews of much greater length and which deal more specifically with some fields. Although the idea that schizophrenia may be the consequence of some genetically determined metabolic defect appears to be quite plausible at the moment, this does not mean to say that the problem will finally be resolvable by biochemical techniques or effectively described in biochemical terms. The studies with psychotomimetic substances have indicated that the alteration of several biochemical parameters may result in psychic disturbances and that the complexity of interaction may not be capable of simple chemical description. Ideas concerning structure, particularly as to what is significant in the organisation of the central nervous system, are still crude. It is virtually impossible to relate any aspect of an animal's behaviour, let alone that of man,

to any specific organisation in the brain. Possibly when the parameters of brain structure significant to behaviour are realised then such functional disturbances as schizophrenia may be more comprehensible in these terms. However, until such comprehension is possible, the biochemical description and dissection of brain function would appear to be the more readily available.

The following contain reviews both of a general nature and more detailed accounts of specific aspects.

DOWNING, D. F. (1962), Chemistry of Psychotomimetic Substances, *Quarterly Reviews of the Chem. Soc.* **16**, p. 133.

ELLIOT, A. C., PAGE, I. H. and QUASTEL, J. H. (1962), *Neurochemistry* 2nd edition, publ. C. C. Thomas.

FESSEL, W. J. (1962), Serum proteins in Schizophrenia, *Arch. Gen. Psychiatry*, **6**, 132.

FOLCH-PI, J. (1961), *Chemical Pathology of the Nervous System*, publ. Pergamon Press.

Pharmacology of Psychotomimetic and Psychotherapeutic drugs (1958). *Annals N.Y. Academy of Sciences.* Vol. 66, art. 3.

PUPILS' PHYSICAL SOCIETY

On Thursday, November 19th, the Pupils' Physical Society held its Annual Combined Meeting with students from St. Thomas's Hospital. The meeting was held in two parts—before and after dinner. Before dinner there were eleven patients to examine, and a well-planned quiz to answer.

The patients, who had been selected from the wards by Misses Christina Lawrie and Juliet Pike, and Messrs. Tunstall-Pedoe and Warren, showed a variety of interesting signs. I do not think any of us had previously met a patient with the rare Cyclical Automotor Palsy (although a few days later we heard more about this in a certain clinical lecture). Other neurological disorders included Motor Neurone Disease; Bitemporal Hemianopia; and Syringomyelia with Carcinoma of the Bronchus. None of us was able to diagnose pituitary acropachy in a woman with recurrent thyrotoxicosis, showing pretibial myxoedema, exophthalmos and clubbing of the fingers. Other cases that drew distinction were a man demonstrating a pharyngeal pouch, the swelling typically on the left side of the neck, and a patient suffering from the Malabsorption Syndrome. We are reminded of Clendenning's quotation: "Clinical diagnosis is an art, and the mystery of an art has no end; you can always be a better diagnostician".

The quiz exposed rather too many blanks in our knowledge, as well as enlightening us with many new facts. Surely every Guy's man should know who first described myxoedema. Up-to-date questions on the combination of drugs demonstrated forcibly the necessity of a clearer understanding of the pharmacological actions. Do you know which haematological disorder results from eating broadbeans, and which others follow Sedormid Therapy and ingestion of Phenacetin? "Reports" on patients suffering from single vitamin deficiencies were cleverly and often amusingly compiled for our diagnosis. Pathological specimens had to be identified and associated with maps of geographical distributions. An interesting set of radiographs of pathological calcifications left one guessing. Messrs. Brian Neville and Anthony Davis are to be congratulated on producing a very stimulating and informative quiz.

After dinner, the meeting was resumed in the Students' Union, and began with a discussion on the clinical findings in the patients seen earlier. We were pleased to welcome Dr. M. O'Brien (neurological House Physician) at this point and are grateful to him for offering us detailed information on the neurological disorders seen. The quiz was won by a student from St. Thomas's Hospital, who was rewarded with a book token.

In conclusion, on behalf of all those present, I would thank all the abovenamed, who gave so much time and care to produce a most instructive and well-run evening for our benefit.

JENNIFER PEARSE.

THE SAMARITANS

by Jeanette R. McHugh

Approximately seven minutes' walk from Guy's, over London Bridge and down towards the Mansion House, stands the Church of St. Stephen, Walbrook. The passer-by would find little to distinguish it from many of the City's less picturesque churches. Closer investigation would reveal, however, that behind this grimy façade lies Wren's lovely interior and also the home of the Samaritans, an organization whose name has become widely known not only in London, not only in Britain, but throughout many continents.

When, in 1953, the Rev. Chad Varah took the living of St. Stephen's—a church with virtually no parochial responsibilities of the ordinary kind—he had in mind the founding of a new kind of service, based on the parable of the Good Samaritan. I am sure he then had little idea that he was starting a movement which would spread into every country where suicide is a major problem.

The telephone number of St. Stephen's—MANsion House 9000—is one of the best known numbers in London. It has been described as the " spiritual 999".

The Samaritans speak of themselves as an organization to help those tempted to suicide or despair. Just how many such people there are was shown in a report published last summer. In Britain alone there are almost 5,000 suicides a year and approximately 40,000 attempted suicides. These numbers, of course, tell only of known cases. How many more must there be, unknown and unrecorded.

To quote the words of Chad Varah himself: "A person tempted to kill himself may need one, two or all three of the following kinds of help: medical treatment, non-medical counselling or non-professional befriending. In many cases, e.g., endogenous depression, the life cannot be saved without the first of these; yet the most important of these is the last. If two kinds of help are needed, befriending is one of them. If only one kind of help is needed, it is befriending. If medical treatment is (and it often is) a *sine qua non* of survival, befriending may be the *sine qua non* of that treatment being accepted".

Here we find the keyword of the Samaritan's work—"befriending". To the potential suicide the world is full of people who " don't care " about him and his problems. To find someone who *does* care—who will listen to, and in some way enter into, his problems—may prove to be if not his salvation, at least the life-line to which he may cling until such time as a more concrete solution to his problems can be found.

How do the Samaritans go about this work of befriending? Their method is to use the mediums of press, radio and television to keep an easily-memorised telephone number before the public in each area of operation, and to keep this telephone manned day and night by Samaritans ready to show personal concern and friendship to despairing people who ring it.

The caller will meet with the " personal caring " which means so

much to the lonely. He will be invited along to St. Stephen's to talk over his problems with one of the Samaritans and, if he so desires, to have an interview with one of the priests or social workers. If his circumstances require it he will have access, through the organization to the services of doctor, lawyer, psychiatrist or some other specialist. If, as is so often the case, all he needs is pure unadulterated friendship, "with no strings attached", he will be introduced to a member of the organization who will give him this friendship by meeting him and spending time with him. Time to talk, time for a coffee or a visit to the cinema.

Who are these Samaritans? They are lay people, in most cases with no qualifications in the field of medicine or social work. In some cases people who themselves have come to the Samaritans seeking help, and finding this help have stayed to try in some way to pass it on to others.

The Samaritans work under the guidance of the staff which, at St. Stephens, consists of the director, Rev. Chad Varah, two other priests and a psychiatric social worker.

The Samaritans themselves are divided into six categories:—

The *Helper* is one who is associated with the work in some outside way such as providing accommodation or hospital visiting.

Friends—the largest number, are associated more intimately with the work. They receive a course of six lectures on different aspects of, and problems involved in, befriending. Then, provided they are found suitable, they will go on to telephone duty and simple befriending under the guidance of a senior Samaritan.

Probationers are a group from which more is expected in the way of time and capability. They are people judged able to make sound decisions and to man the "flying squad" which goes out in cases of grave emergency or disaster. They receive more detailed and prolonged instruction in the different situations they are likely to meet—psychological, sexual, marital or religious problems, to name but a few.

It must be emphasised at this point that, although the Samaritans have a religious foundation, they are completely non-sectarian. The organization contains people of every creed—Anglican, Roman Catholic, Jew, Non-Conformist, Hindu, Moslem—and many of no creed at all. Religious belief, or lack of it, is no barrier to service with the Samaritans. No Samaritan will ever try to force his or her beliefs on a client. It is not an evangelising organization.

"If a man is going to be evangelised," says Chad Varah, "he'll be evangelised by someone else. We try to preach in deeds rather than words, and we never take advantage of a man's distress to preach a sermon".

The *Samaritan* status is reached by relatively few. Those people are chosen from among the Probationers for what they *are* rather than for doing more, but most do a greater amount of befriending, particularly of more difficult clients, in addition to taking charge of junior volunteers. There is an obligatory Christian Service of dedication for these people.

Associates are people who do not profess to be Christians but have reached approximately the same status as Samaritans and do roughly the same work. In Britain alone the Samaritans have 40 Branches and at this moment plans are in operation for the opening of many more. But it is not only in Britain that the Samaritans are expanding. There are branches all over the world—from Paris to Bombay and from Boston to Buenos Aires. Thus from a dream born ten years ago in the mind of one man, has grown this far-seeing, far reaching organization which has proved a thousand times over the life-saving value of the old prescription for "tender loving care".

AFRICA IV—*Quodlibet*

" The coloured South African is more literate than any other of his fellows on the African Continent". This is one of the statements Mr. Erasmus made in his speech, " The Case for Apartheid " on Thursday, 28th November. Mr. Erasmus has been in the South African Diplomatic Service for many years, and is at present working as an " Information Officer " in South Africa House.

In his speech, Mr. Erasmus placed more emphasis on the "Why" of apartheid as opposed to the "What?" When the forefathers of the present white South African landed in South Africa, they found as indigenous peoples only the Bushmen, and Hottentot. The former being very mild, were quickly forced northwards, into the desert; the latter remained to form the nucleus of the present "Cape Coloureds". The Noortrekkers pushed inland and eventually after about 60 years met up with a race advancing down from the North. These were the Bantu. They were different, entirely, from the Whites, in culture, social structure and colour. The two peoples were so alien that there ensued wars between the two which lasted for several years. Eventually they settled their differences enough for war to cease, but they made no attempts to intermingle. In fact, over the next 300 years the societies remained and developed very much on different lines. The Bantu had not adopted any of the standards or practices of the white people. The South Africa Act of 1909 had perpetuated and increased this dichotomy of the races. It recognised two different peoples, a white one fit to govern, and a black, as yet, unfit to govern. The position had been maintained, but by education 75% of the Bantu are now literate. This means that black can now begin to run their own states or Bantustans.

Further to his historical arguments, Mr. Erasmus maintained that the situation in the rest of Africa also pointed to apartheid as the logical answer to South Africa's problems. He said that white and black had failed utterly to integrate in other States; so why should they integrate in spite of all contradictions in South Africa? Indeed, he maintained that it could and would not work, that apartheid was the only answer.

Having shown apartheid was inevitable, Mr. Erasmus briefly indicated the "what?" of apartheid. It entailed separating the races entirely. Eventually in South Africa there would be both white and black states, these would both be entirely independent and self-governing. Already they are moving whites and blacks out of areas where this policy is being implemented. The black areas or Bantustans have been detailed and the movement back to these areas of the Bantu is being encouraged. The Cape coloureds are likewise to be treated as a separate people.

The speaker finished by pointing out that already in that week, elections in the first partially governing Bantustan—the Transkei—had taken place.

After this speech, Mr. Erasmus answered unfailingly all the highly critical questions to which he was exposed. Perhaps some of his answers were not exactly to the point, but they were effective in temporarily quietening the more outspoken critics. The questions eventually ceased due to the exigencies of time, not lack of interrogation, and the meeting broke up quietly.

The next meeting of the Quodlibet Society will be in conjunction with the Catholic Society at the end of January.

JONATHAN DARE.

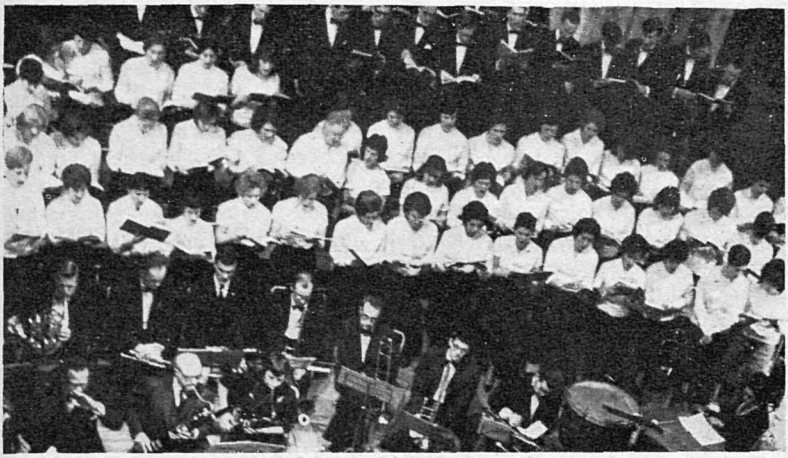
CRITICISM

by G. A. THOMAS

Messiah

by G. F. HANDEL

Guy's Hospital Music Club Performance—December 10th



" There," said Beethoven, pointing to the score of *Messiah,* " is the truth." And his use of the chorus in the climax of the ninth symphony and in " Fidelio " show beyond doubt that for him it was musical truth. Although it was hailed as a masterpiece at its first public performance in Dublin in 1741, its first London performance in 1743 was received indifferently although George II brought the audience to its feet for " Hallelujah", creating a precedent that has never lapsed. Since that time it has become the most popular of oratorios. *Messiah* is certainly the greatest choral work (and some would say the greatest musical work) ever written.

How, then, did the Music Club's performance of *Messiah* in Southwark Cathedral on December 10th match the work's greatness? One can only say, splendidly. This, the Music Club's most ambitious performance so far, was also its greatest achievement and one was proud as well as grateful that such an enormous audience should have been present to mark the occasion. The Cathedral was full and they were standing in the aisles.

The evening was a personal triumph for the conductor, Robert Sells who, with an orchestra of 70 and a chorus of 130 under his baton gave a unified and most shapely reading of a score which can so easily become a series of disjointed musical "numbers". Though purists may frown at his choice of Mozart's orchestration of *Messiah,* the grace which the conductor brought from the orchestra without for one moment losing the deep sense of musical

drama which fills the work, fully justified the choice. Only during the "Pastoral Symphony" was a slight staleness allowed to creep into the orchestral playing and this was largely due to an uncertainty in the bass. Robert Sells' conducting was impressive throughout, as instanced by the nice balance which he brought to the alternating harmony and counterpoint of "Glory to God"; yet with "Hallelujah" he suddenly gained a new authority which gave enormous impetus to the rest of the work. How very satisfying it is when the musical climax of a great work is matched in actual performance.

Under the outstanding leadership of Christopher Gaches the orchestra was pleasantly free from that sourness of tone which is so often prevalent in the performance of amateur orchestras. Throughout the work a satisfactory orchestral balance, with soloists and chorus alike, was well maintained. The trumpet's solo in "The trumpet shall sound" and the organist's accompaniment to "He gave His back to the smiters" were both noteworthy.

Miss Margaret Crossey, the soprano soloist, was the most professional of the soloists. Hers is a very true, white, soprano voice, reminding one occasionally of Margaret Ritchie. Her voice has become fuller in recent years and she showed an authority in her singing which is essential to oratorio. In particular her "Rejoice greatly" had enormous punch. Most interestingly, the alto solos were sung by a young male alto, Adrian Culshaw. Unfortunately, much of the part lay too low for his voice and only occasionally did one glimpse its true quality. His phrasing of "He was despised" was surprisingly mature. Peter Bingham, the tenor, possesses a rich textured voice which was beautifully controlled, especially in "Comfort ye" and "Behold and see". It was particularly pleasant to have as bass soloist a Guy's man, John Winter. His voice has a very pleasant lyrical quality. Unfortunately, lyricism is called for seldom in the bass solos of *Messiah*. A much more sturdy, vigorous attack is required, particularly in "Thus saith the Lord of Hosts" and "Why do the nations" although he sang these extremely difficult solos with notable accuracy.

As it should be in *Messiah*, the singing of the chorus was the most exciting part of the evening. Guy's Hospital's Chorus was at its very best. From the first entry with "And the glory of the Lord", through a beautifully controlled "For unto us a Child is born", a powerful "Lift up your heads" to a superlative "Hallelujah" their singing was magnificent, with a great sense of occasion. Never has one heard such pure and youthful, yet mature singing, from the sopranos of a chorus. "Hallelujah", "Blessing and honour" and "Amen" can rarely have sounded better.

The stillness and concentration of the large audience within the cathedral was striking testimony to the power both of the work and of the performers. So that whatever account the Music Club may give of itself in the future it is certain that this occasion was one which will not easily be surpassed.

(Photograph by Guy's Hospital Photographic Society).

CORRESPONDENCE

The Cosmo and Mabel Bonsor Scholarship, 1964

SIR, May I through the courtesy of your columns draw the attention of your readers to this Scholarship which is due to be awarded early in the New Year?

The Scholarship is to the value of £60, and is available to any Member of the Guy's Hospital Nurses' League, in order to assist with expenditure incurred for the purpose of taking post-registration Study Courses, or Study Tours, at home or abroad.

Full details may be obtained on application to myself, and all applications should contain full details of the proposed Course or Study Tour for which the Scholarship would be used. The closing date for applications will be Monday, January 20th, 1964.

Yours, etc.,

ANNE M. JOHNSON,

Matron, Guy's Hospital and Honorary Secretary, Guy's Hospital Nurses' League.

Matron's Office,
Guy's Hospital.

Nurses and Students?

SIR, With reference to the letter that appeared in your issue of November 30th, with the heading "Nurses and Students?": The Student President received a letter from the Hon. Secretary of the Guy's Branch of the Student Nurses' Association. The contents of this letter were discussed at the next Council meeting of the Students' Club. A reply was sent within a week following this meeting stating the opinion of the Council; namely that it was felt that as the proposals in the letter from the S.N.A. could not be entertained under the constitution of the Students' Club, the Council could not discuss them further.

We remain,

Yours, etc.,

PATRICK ROWE,

Student President.

RICHARD STRICKLAND

Student Secretary.

Guy's Hospital Students' Club,
Guy's Hospital.

REPRINTS

The first fourteen articles in the series "*A Scientific Background to Clinical Medicine*", are now available in reprint form at one shilling each. These and subsequent reprints in this series may be obtained on application to the Manager, Gazette Office.

Guidance to Parents of Handicapped Children

The Irene Ewing Memorial Conference

The Conference was held at the Royal College of Surgeons on November 7th under the auspices of the National Deaf Children's Society and the Department of Audiology and Education of the Deaf, Manchester University.

Dr. Terence Cawthorne (P.R.S.M.) opened the Conference with emphasis on the role of the team, the child and his mother at its centre, in bringing the partially—or wholly—deaf child to realise his full potential. Mrs. Freddy Bloom (Chairman, N.D.C.S.) reminded the meeting that the final disability of the child was as much a result of people's attitude to a condition, as of the condition itself—" it is as severe as society makes it".

The discussion became more specific, as Sir Alexander Ewing (Director of the Department at Manchester) revealed how methods of speech training and communication were continuing to evolve, especially as new electronic techniques were developed. The deaf child was assisted by the adoption of learning through a number of sensory channels at once, by the correlation of reading, hearing his voice amplified as he spoke and the words of his teacher. The importance of introducing a child to everyday vocabulary had to be put to parents, who often failed to realise that participation in normal activities need not imply any verbal learning by the deaf child (e.g. over 50 per cent. of deaf children at school, with I.Q.'s of normal range, had vocabularies appropriate to a child three or four years younger). Communication was basic to sound emotional relationships and mental development, and the prime communication of society was a verbal language.

Lady Ewing (Hon. Lecturer, Manchester) summed up their approach to the parent in three main points. The mother's understanding of her child's difficulty could now be improved by simulating various forms of high-frequency deafness with frequency-filtered recordings, revealing the distortion of normal speech. Interrupted speech was rendered far more intelligible when the lips of the speaker were visible, and this could be demonstrated. It had been found too that the hearing of many children was improved by replacement of their standard aids by Hi-Fi equipment. Mother-and-child play sessions, combined with Hi-Fi hearing aid, helped both to a fuller communication and the child to a better knowledge of everyday play objects. The stronger this mother-child bond could be forged, the more the child would accept speech as the normal mode of communication.

Sir George Godber (Chief M.O., Ministry of Health and Education) opened an afternoon session where interests ranged beyond the child handicapped by deafness. Dr. Mildred Creak discussed the problem of the psychotic child. Again the aim was primarily communication, by any possible means; mixing with normal children had achieved some success, and deserved further trial. The process of visual development and prompt detection of maldevelopment, was discussed by Dr. Mary Sheridan (M.O., London), with further emphasis on everyday experience as a vital source of learning in the child.

Dr. R. C. MacKeith (Guy's) remarked on the close relationship between all the problems discussed, and on the inter-relation of sensory deficiencies. He called for a comprehensive approach to the whole child, with respect to all his faculties. Mr. Guildford (Birmingham University) opened with a quotation: " He that hath, to him shall be given; he that hath not, from him shall be taken, even that which he hath", referring then to the mentally deficient child, condemned to even less mental and social stimulation than the normal child, despite his greater need. Parents needed advice on the education of their child through stimulating activity, and guidance on the ultimate target for their child.

After several points were raised by speakers from the floor, Dr. Peter Henderson (Chief M.O., Ministry of Education) summed up. As he pointed out, this conference reflected well the many-sidedness of the great work before its members. Certainly, that work will be bettered as a result of this thoughtful, and exciting, conference.

BRENDAN HICKS.

REVIEWS

THE EARLY DIAGNOSIS OF CONGENITAL ABNORMALITIES

by R. W. Smithells. Cassell. 1963. Pp. 198. *Price* 25*s*.

This book is intended as a practical guide to the diagnosis of congenital abnormalities—especially during the four weeks before and after birth. It appears to be based on the author's first-hand experience, which would explain the uniformly high standard of the book. A great deal of information is contained in a relatively small volume (12.1 x 18.4 cm., 198 pages), but nevertheless the text is easy to read.

The first chapter deals with " Prenatal Diagnosis", and includes sections on hereditable disorders and radiological examination of the foetus. The second chapter is concerned with diagnosis during labour.

The largest (74 pages) and perhaps the most interesting chapter (3) is devoted to " Examination of the symptomless infant". In it are descriptions of what to look for when examining a newborn infant. The reader is told what are the common causes of each of the possible findings described, and many of the more important rarities are also mentioned.

In a similar way chapter 4 is concerned with " Early symptoms of congenital abnormalities", and discusses the differential diagnosis of such awkward clinical pictures as " the floppy infant", dysphagia and heart failure in the newborn period.

The last chapter gives advice on how to interview parents of malformed babies and includes the genetic prognosis of over thirty of the major conditions previously discussed in the text.

This is an outstanding, good book and must surely be of great use to medical practitioners whose work involves care of babies around the time of delivery.

R. G. SPECTOR.

A TEXTBOOK OF GYNAECOLOGY AND OBSTETRICS.

by D. G. Wilson Clyne. Longmans. First edition, 1963. Pp. 1019. *Price* 90s.

It is during the obstetric appointment that the student is able to do far more in a practical sense than ever before in his clinical career. In addition he can to a limited extent test out some of the injunctions made to *accoucheurs* by the many available textbooks. Some textbooks by their nature and presentation will encourage his initial enthusiasm, while others may easily leave him confused and shake his interest because of an ungainly array of facts and confusing nomenclature.

This new book belongs to the former category, and for those wishing to read a clear and comprehensive account of both obstetrics and gynaecology, it can be highly recommended. The approach is chiefly a practical one compiled from personal experience and the experience of others as culled from original papers which are referred to throughout the text. The section devoted to gynaecology occupies the first third of this book and is liberally illustrated with diagrams particularly on those pages dealing with pelvic anatomy and gynaecological operations. The chapters on infertility, tumours of the genital tract and hormone therapy are especially useful, benefiting from the clear system of headings employed throughout the book. In the remaining part on obstetrics, the accent is on skilful examination, diagnosis and management of the patient, covering topics ranging from a systematic analysis of pelvic contraction to mental disturbances in the puerperium and their medico-legal aspects. When discussing the management of the third stage of labour, the author recommends the routine administration of ergometrine with the anterior shoulder, followed by controlled cord traction (which he refers to as the " Brandt-Andrews manoeuvre "). Although this " modern routine " has several statistical series to support its use, it still has to be widely accepted as the method of choice in domiciliary obstetrics.

One of the most enjoyable features of this book is that it attempts to make fair and reasoned discussion of the majority of problems which are present in current

practice. For those who wish to satisfy their curiosity further, the text contains many references to selected papers listed at the end of each chapter. The illustrations, of which there are 356 (263 diagrams and 83 photographic plates) are of a very high standard, although it is a pity that the X-ray photographs have not been consistently reproduced as one sees them on the X-ray screen. There are several minor criticisms of the text itself, *e.g.* the somewhat brief section on gynaecological prolapse could be improved by relating it more closely to the preceding account of the anatomy of the genital organs and to the following explanation of the relevant operations. Also the use of the term "Mongolian Idiot" appears rather incongruous in an otherwise sensitive text, and there is a very brief and inadequate account of respiratory distress in the newborn. Typographical errors are unfortunately common, but it seems that these are almost inevitable in a first edition. Several wrong founts and ectopic heading (*e.g.* Pp. 193 *ff*) as well as spelling mistakes have slipped the eyes of the proof-reader as well as more serious errors, *e.g.* substituting *mg* for G when discussing blood sugar levels. The index, too, has several gaps and occasional erroneous page numbers.

Nevertheless, this book maintains a high standard of text-book design and presentation throughout. This alone makes the very act of reading and learning infinitely more pleasurable, which befits the lucid and eclectic style of the author.

GORDON REEVES.

HAEMATOLOGICAL TECHNIQUE,

by Darmady and Davenport, 3rd Edition, 1963. Churchill. Pp. 263. *Price* 30*s*.

This is, in many ways, a disappointing book. It contains a certain number of typographical errors; these are always difficult to avoid, but in this case, though mostly unimportant, some are definitely misleading; for example, on p.221 'anti-A antibody' and 'anti-B antibody' are transposed. On the same page the Fisher nomenclaure for the R_1r rhesus group is incorrectly given as Cde/ede, although it is correctly described as CDe/cde elsewhere in the book.

Some of the new material incorporated in this edition is badly presented. A method for the estimation of seum vitamin B_{12} is placed rather haphazardly in the middle of the chapter 'Recognition of cells of the erythrocyte series'. This is a very full account of the microbiological assay of vitamin B_{12} using Lactobacillus leichmannii (referred to in the text as Lactobacillus Leichmannii). There is no mention of the preliminary extraction of the serum with cyanide, without which large amounts of B_{12} may be lost in the protein precipitate (Matthews, 1962). No references are given as to the source of this method. Normal values are quoted which are identical with those found by Mollin and Ross (1952, 1953), who used a different test organism (Euglene gracilis). Most authors using the method as it is described here obtained mean levels of serum Vitamin B_{12} which differ from these by up to forty per cent.

Another method for the determination of leucocyte alkaline phosphatase activity (Kaplow, 1955) gives an inadequate account of the interpretation of the results in the light of more recent findings (Hayhoe and Quaglino, 1958).

Generally speaking this book is made more difficult to read by the authors' style of writing and their choice of terminology. There are more errors, inconsistencies and omissions than one would expect in a textbook of technique. New material is poorly integrated with the text. The methods themselves are not well chosen. Many of the references are out of date and one feels that more references could well have been included.

This book cannot be recommended.

J. J. RIPPEY.

REFERENCES:

HAYHOE, F. G. J., and QUAGLINO, D. (1958). *Brit. J. Haemat.*, **4**, 375.
KAPLOW, L. S., (1955). *Blood*, **10**, 1023.
MATTHEWS, D. M., (1962). *Clin. Sci.*, **22**, 101.
MOLLIN, D. L. and ROSS, G. I. M. (1952), *J. Clin. Path.*, **5**, 129.
MOLLIN, D. L. and ROSS, G. I. M., (1953), *J. Clin. Path.*, **6**, 54.

SPORT

RUGBY FOOTBALL

The Christmas break arrives with the Club record as satisfactory as it has been for some years.

Played	Won	Drawn	Lost	Points For	Against.
16	7	1	8	105	185

Much of the credit for this must go to the captain, who resolved at the outset to win matches against teams of comparable strength, thus enabling the lessons learned from the more difficult matches to be put to good profit, and he has certainly succeeded.

With the New Year come the testing Cup matches, and it is hoped that the confidence engendered in this term's play will be converted into positive results in that campaign.

FIXTURES—1964.

Jan. 4	Richmond	*H.O.P.*	
,, 11	Plymouth Albion ..	*Plymouth*	
,, 18	Taunton	*H.O.P.*	k.o. 11.00
,, 25	Devonport Services ..	*H.O.P.*	k.o. 2.30
Feb. 1	Coventry	*H.O.P.*	k.o. 2.45
,, 8	Old Askeans	*H.O.P.*	k.o. 11.00
,, 14	Aberavon	*Aberavon*	Floodlit
,, 22	Exeter	*H.O.P.*	k.o. 3.00
,, 29	Metropolitan Police ..	*Imber Court*	
Mar. 7	London Welsh	*Richmond*	
,, 14	Nuneaton	*Nuneaton*	
,, 21	Gloucester	*H.O.P.*	k.o. 3.00

Reports and Results

RUGBY FOOTBALL

GUY'S v. STREATHAM

At Streatham 7th December, 1963

Result: won 14—6

On a cold, dry afternoon at Thornton Heath, the Hospital had probably their best win of the season by 2 goals (1 pen.), a try, and a drop goal to a penalty and a drop goal.

Thomas again deputized for Kerner, and Sharp came in at blind-side wing-forward.

The game immediately developed into an interesting battle between two equally matched sides. After 10 minutes Streatham took the lead with a penalty from 30 yards.

Wright, making one of his lightning interceptions on the Streatham 10 yard line, outstripped the defence to score beneath the posts. Edgar converted.

The first half was very even. Guy's were quicker on the loose ball, and the threequarter line better organised. Streatham were well served by their fly-half and full-back who were content to kick or produce individual efforts.

After half-time, Edgar succeeded with his third penalty attempt, this being the most difficult, from 40 yards towards the touchline.

Streatham launched a series of attacks on the Guy's line One of these was countered, but from a faulty drop-out the Streatham fly-half dropped an easy goal from the resulting scrum. Twice the Guy's line was saved only by desperate covering first by Edgar, then by Sharp.

Guy's overcame this long period of defence, and the pack, roused by some more than robust play by both packs, began to take control. Play centred on the Streatham 25.

Allan raced through to win first a fly hack and then the try. Straight away Peace jumped beautifully at the line out, held to control break away forwards, giving Edgar time to drop a superb goal from 30 yards near the touchline.

Guy's deservedly won a match full of fire and good rugby to keep supporters warm on this cold afternoon

ROGER BROWN.

Team: R W. T. Myall, D. A. Biggs, C. J. Wright, A. Allan, J. C. Thomas, A. Edgar, H. W. MacGregor, J. E. Davies, E. D. Price, A. Fisher, P. K. Peace, A. Kingdom, H. Sharp, D. Hendrick, I. A. Baker (Capt.).

GUY'S v. OLD CRANLEIGHANS

At Thames Ditton 14th December, 1963

Result: won 3—0

The first fifteen won this hard game to make their record as respectable as most other first-class clubs this season. The result was thus satisfactory—the manner in which it was attained was not quite as good as it could have been. The opportunity for scoring at least three tries occurred during the game; on each occasion the final pass or movement failed. However, the openings were constructed repeatedly and this type of rugby must lead to success.

The game opened with Guy's playing down wind, and with a good supply of the ball from scrum and line-out, establishing themselves in the opponent's half. Scrappy play prevented any constructive movement and the game for a time was a contest of strength between the two hard working packs. Persistence and the territorial advantage were rewarded in due course by the inevitable penalty kick, which Edgar converted from thirty-five yards out. A good kick which illustrated the value of place-kicking and that of maintaining play in the opponent's half. Occasional sorties by the Cranleighans towards our line were thwarted by excellent defensive play by the back division. Towards the end of the first half Guy's may well have scored two tries but minor infringements apparently disallowed these. A further penalty attempt hit the crossbar just before half time, and the latter arrived with only a three point advantage and the prospect of playing against the wind and against an opponent fly-half with a good kick.

Shortly after play resumed, the Cranleighans pressed hard for a time and cohesion was lacking in the Guy's pack. However, good tackling and valiant falling on the loose ball, particularly by MacGregor at scrum half, saved the day and Guy's gained the ascendency once more. At this stage it became obvious that both Wright and Allan in the centre could run through almost at will, but it was too late in the game to take advantage of this with our opponent's defensive kicking keeping us out of striking range. Quick heeling from the loose by the now alert pack gave one or two chances which were wasted by poor finishing. Our thwarted hopes for a further score turned to anxiety in the last few minutes during which only desperate tackling prevented the Cranleighans equalising or even snatching a win.

S. A. R. COOKE.

Team: R. W. T. Myall, D. A. Biggs, C. J. Wright, A. J. Allan, J. C. Thomas, J. A. Edgar, H. W. MacGregor, J. E. Davies, E. S. Price, A. R. Fisher, P. K. Peace, A. J. Kingdom, H. Sharp, D. J. Hendrick, I. A. Baker (Capt.).

HOCKEY

REVIEW, SEASON 1963-64

At the half-way mark in the season the hockey club has enjoyed a fair measure of success. The team spirit in the club has never been better, which is borne out by the fact that five teams have been turned out every week, with a few reserves as well!

The 1st XI record is very commendable:—

P.	W.	D	L.	G.F.	G.A.
11	5	4	2	36	14

The team is a well balanced one and is settling down into a very useful side—a side that may well bring the Inter-hospitals cup back to Guy's.

A. Hirst, in goal, has proved to be a difficult man to beat and has thwarted many an attacker with his quickness in reaction. Of the backs, D. Loader and K. Hayes have usually provided the solidarity a defence needs, though both have had their 'off days', but fortunately not at the same time.

The half-back line, with J. Sedgwick's experience, C. Brook's stickwork, and J. Craft's excellent stopping of the ball makes a very strong first line of defence. V. Harvey has made an adequate substitute on the occasions he has been called on to play.

The right wing position was first tried by A. Winskill, who had the speed but lacked in ball control and stickwork. R. Carruthers, who took over this position, has less speed but has fairly good stick control and ball sense. M. Lewis has also played in this problem position and shows distinct promise.

R. Strickland, the little powerhouse of the forward line, has an astute hockey brain and plays some delightful hockey. M. Appleby, in the centre, has matured into a most promising player. He has a good eye for the ball and possesses many of the finer hockey skills.

P. Bennett, in his first season in the 1st XI, is settling down to play some good thrustful hockey and his performances auger well for the future.

P. Liddiard, after his long absence, is improving in each game and getting some of his confidence back. He is a good player and it is encouraging to see him winning his fight back to his old form.

Five of the above players, A. Hirst, D. Loader, K. Haynes, R. Strickland and C. Brooks have all played for the United Hospitals' team.

The 2nd XI, once against captained by T. W. Negus, are trying to retain the Junior Cup, and with their present side they should be capable of doing so.

The 3rd, 4th and 5th XI's form the main body of the club and great credit must go to the players in this section for their maintained enthusiasm and interest despite having to play away most Saturdays. It is only by their efforts that the club as a whole can thrive and be successful.

Finally it is hoped that the next half of this season will prove as enjoyable and successful and that this year the weather will not cause the cancellation of too many matches.

DAVID LOADER.

ASSOCIATION FOOTBALL

REVIEW, SEASON 1963-64

The club have had a very good and promising opening half of the season. The 1st XI have played seventeen matches, winning fifteen, drawing once and only losing one game. They have scored 89 goals and conceded 21 (of which six came in one match) They seem certain of retaining the rather splendid Governor's Shield, having won the first leg 9—0. At present the eleven are on top of the Hospitals' League, after winning all their four matches (goals for—20; against—1). The second XI are also on top of their University League.

The opening two rounds of the University Cup have resulted in excellent matches. The team beat The London 3—1 and more recently were victorious over U.C., 4—1. They now meet Northern Polytechnic in the quarter-final of this competition. Other outstanding matches have been the 4—1 win against Reading University and the 2—2 draw v. Imperial College.

The second round of the Hospital's Cup sees Guy's playing U.C.H. on their notorious pitch. Throughout the season the team have played consistently well, rising to the big occasion; sometimes, however, being very mediocre. Cutler (centre-forward) and Atkins (left-wing) are to be commended in the forward line for their very fine play, and scoring between them 53 goals. W. W. Davies has been very solid and often brilliant in defence. Nine of the eleven have consistently represented the Hospital in U.H. fixtures.

The future, with the later rounds of the cups, will really test the team to show their capabilities. It will be important for every single player 'to move off the ball', calling sensibly for it and also for very hard and vigorous tackling by the defence, so getting on top early in the game. The team have adapted their soccer for the wide open spaces of H.O.P. It will now be essential to modify this according to the numerous away games that will be encountered in the second-half of the season.

PETER DAVIES.

HOSPITAL INFORMATION

NURSING NEWS

12.11.63 to 25.11.63

Entered
Staff Nurse P. Sargeant.
Staff Nurse P. Dixon

26.11.63 to 10.12.63

Left
Sister J. Taylor.
Staff Nurse B. Bayley.

Entered
Staff Nurse M. Ballany.
Staff Nurse L. Montgomery Smith.
Mr. T. Connell.
Staff Nurse E. Meredith (Evelina).
Staff Nurse D. Millership (Evelina).

PERSONAL

Special rates for Guy's Staff, Students, Nurses and Subscribers to the Gazette. 5 words 10s. 6d. 15 words 21s. 0d. Box Numbers 1s. extra.

Ordinary rates 15s. 0d. 5 words. Box Numbers 1s. extra

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Dr. R. C. Westbury, 4012, Comanche Road, Calgary, Alberta Canada.

Dr. and Mrs. P. A. Zorab, Tangier Lodge, Vine Road, Barnes, S.W.13.

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ANSON, B. J., An Atlas of Human Anatomy. Saunders, 1963.

BARNES, C. G. Medical Disorders in Obstetric Practice. Blackwells, 1962.

BELL & GRANT. The Structure and Function of the Membranes and Surface Cells. Cambridge U.P., 1963

BIGGER'S Handbook of Bacteriology. Balliière, 1962.

BRANWOOD, A. W., Modern Concepts of the Pathogenesis of Coronary Athersclerosis. Livingstone, 1963

BREWS, A., Holland & Brew's Manual of Obstetrics. Churchill, 1963.

BRITISH PHARMACEUTICAL CODEX. Pharmaceutical Press, 1963.

BRITISH PHARMACOPAEIA. Pharmaceutical Press 1963

CAMPBELL E. J. SLATER, J. D. H. & KELLAR, R. J. Clinical Physiology. Blackwells, 1963.

CECIL-LOEB Textbook of Medicine, W. B. Saunders, 1963.

CIBA FOUNDATION Bilharziasis. Churchills, 1963.

CIBA FOUNDATION STUDY GROUP No. 15. Pathogenesis of Leprosy. Churchills, 1963.

CLARK, W. E. le Gros. Antecedents of Man. Edinburgh U.P., 1962.

CLYNE, D. G. W., Textbook of Gynaecology and Obstetrics. Longmans, 1963.

COURT, S. D. M., Medical Care of Children. Oxford U.P., 1963.

CURRAN, D. & PARTRIDGE, M. Psychological Medicine. Livingstone, 1963.

DAVIDSON, Sir S. & PASSMORE, R., Human Nutrition and Dietetics. Livingstone, 1963.

DOBSON, J., Anatomical Eponyms. Livingstone, 1962.

DUKE-ELDER, Sir S., Practice of Refraction. Churchill, 1963.

DUKE-ELDER, Sir S., System of Opthalmology 3 Part 1. "Embryology", H. Kimpton, 1963.

ELLIS, R. W. B., Disease in Infancy and Childhood. Livingstone, 1963.

FOLCH-PI, J. & BAUER, H., Brain Lipids and Lipoproteins and Leucodystrophies. Elsevier, 1963.

FREEMAN, W. H. & BRACEGIRDLE, B., An Atlas of Embryology. Heinemann, 1963.

GOLDBERG, A & RIMINGTON, C., Diseases of the Porphyrin Metabolism. C. C. Thomas, 1962.

HAMERTON, J. L., Chromosomes in Medicine. Nat. Spastics Soc. Med. Education. n.d.

HAMILTON, W J., BOYD, J. D. & MOSSMAN, H. W., Human Embryology. W. Heffer & Sons Ltd., 1962.

HINSHAW, H. C & GARLAND, L. H., Diseases of the Chest. W. B. Saunders, 1963.

HUMPHREYS, J. H. & WHITE, R. G. Immunology for Students of Medicine. Blackwells, 1963

HUNTER, D., The Diseases of Occupations. English U.P., 1962.

ILLINGWORTH, Sir C. & DICK, B. M., Textbook of Surgical Pathology. Churchill, 1963.

JAMES, W. O., Introduction to Plant Physiology. Clarendon Press, Oxford, 1963.

KELLAR, R. J., Modern Trends in Gynaecology. Butterworths, 1963.

KINSELL, L. W., Adipose tissue as an organ. Thomas, 1962.

LAST, R. J., Anatomy. Churchills, 1963.

LOCKHART, R. D., Living Anatomy. Faber & Faber Ltd., 1963.

MACKEITH, R. & BAX, M., Minimal Cerebral Dysfunction Nat. Spastic Soc. Med. Education, 1963

MASON, A. S., Thyroid and its Diseases. Pitman Med. Publ. Co. Ltd., 1963.

MAWSON, S. R., Diseases of the Ear. E. Arnold Ltd., 1963

MEDAWAR, P. B., Uniqueness of the Individual. Metheun & Co. Ltd., 1957. 2 copies.

NADAS, A. S., Pediatric Cardiology. W. B. Saunders, 1963

NORMAN, A. P., Congenital abnormalities in Infancy. Blackwell, 1963.

PENROSE, L. S., Biology of Mental Defect. Sidgwick & Jackson Ltd., 1963.

PERUTZ, M. F., Proteins and Nucleic Acids. Elsevier, 1962.

RAVEN, R. W. Cancer: Progress Vol. 1963. Butterworths.

ROESLER, H. & FLETCHER, E., An Atlas of Electrocardiography. J. Wright & Sons Ltd., 1963.

SHAFER, W. G. et al. Textbook of Oral Pathology. W. B. Saunders, 1963.

SMITH, V. H., Visual Disorders and Cerebral Palsy. Nat Spast. Soc. Med. Education, 1963.

TERKLA, L. G. & LANEY, W. R., Partial Dentures. C. V. Mosby, 1963.

THOMSON, A. D. & COTTON, R. E., Lecture Notes on Pathology. Blackwell, 1963.

TROTTER, W. R., Diseases of the Thyroid. Blackwell. 1962

VICKERY, B. C., Retrieval System Theory. Butterwcrths, 1961.

WAY, S., Diagnosis of Early Carcinoma of the Cervix. Churchill, 1963.

WEST, E S., Textbook of Biophysical Chemistry. MacMillan, 1963.

BIRTHS

BRON.—To Sandra and Anthony Bron, a son, James Emmanuel, on October 22nd in "Victoria".

GIL-RODRIGUEZ.—On November 25th, at Lewisham Hospital, to Barbara (née Dean) and Juan Antonio Gil-Rodriguez, a son, Ian Edward George.

HOWARD.—To Rosalin (née Burrows, S.R.N.) and Colin Howard, B.D.S., L.D.S., a daughter, Frances Jane, on 2nd May. A sister for Robert.

LANDON.—On August 15th, at Queen Charlotte's Hospital, to Katen and David Landon, a daughter, Jane Catherine.

MAY.—To Dr. and Mrs. Roger May, on Sunday, December 1st, a son, Robert. Brother for Stephanie and Tim.

ORME-SMITH.—On November 25th, at Little Creek, Bentsbrook Park, Dorking, to Elizabeth Ann (née Ridley) and David Orme-Smith, a daughter, Lucinda Clare, sister for Sarah, Charlotte and Paul.